Name Date Period

Place Value

EXAMPLE Look at the place of the underlined digit.

Write the name of the place of the underlined digit. 1<u>9</u>8 tens

Directions Write the name of the place for each underlined digit.

1. 2,4<u>0</u>6		**21.** 29<u>4</u>		**41.** 88,2<u>1</u>0	
2. 12<u>8</u>		**22.** 5,<u>0</u>20,007		**42.** 9<u>0</u>,909	
3. 70,<u>8</u>35		**23.** 9<u>1</u>9,078		**43.** <u>2</u>03,872,221	
4. 17,<u>5</u>01		**24.** 4,<u>0</u>09		**44.** <u>9</u>10,573	
5. 301,33<u>9</u>		**25.** 5,6<u>8</u>3		**45.** 10,7<u>1</u>0	
6. 10,0<u>0</u>2		**26.** 687,6<u>3</u>3		**46.** 7<u>3</u>7,098	
7. 49<u>1</u>,918		**27.** 48,04<u>0</u>		**47.** <u>4</u>0,910	
8. 4<u>6</u>,023		**28.** 384,9<u>9</u>5		**48.** 10,0<u>0</u>2	
9. <u>6</u>,005		**29.** 8,<u>8</u>37		**49.** <u>9</u>,033,921	
10. 59,<u>7</u>00		**30.** 23,0<u>0</u>0,821		**50.** 8<u>1</u>0,022,033	
11. <u>3</u>4,000		**31.** <u>1</u>,010,001		**51.** 3<u>0</u>0,941	
12. 50<u>0</u>,069		**32.** 5<u>3</u>		**52.** 2,<u>6</u>71	
13. <u>3</u>41		**33.** 5,0<u>7</u>8		**53.** 94,<u>7</u>24	
14. 1<u>0</u>,000		**34.** <u>7</u>08,583		**54.** <u>8</u>03,921	
15. 1,<u>0</u>00,000		**35.** 61,<u>2</u>22		**55.** <u>5</u>06	
16. 3,<u>9</u>02,885		**36.** <u>7</u>01,865		**56.** 1,<u>0</u>34	
17. <u>5</u>03		**37.** 70,<u>7</u>38		**57.** 92<u>0</u>	
18. 16,<u>0</u>30		**38.** 5<u>0</u>1,775		**58.** 1,<u>0</u>23	
19. <u>2</u>,000,003		**39.** 102,8<u>9</u>5		**59.** 46<u>2</u>,987	
20. 73,9<u>9</u>9		**40.** 71,99<u>0</u>		**60.** 10,<u>9</u>35	

Name Date Period

Writing Numbers

EXAMPLE Read the numeral. Write the numeral in words.

1,241 one thousand, two hundred forty-one

Directions Write the following numerals in words.

1. 1,208 _____

2. 204 _____

3. 4,801 _____

4. 80,026 _____

5. 92,224 _____

6. 44,659 _____

7. 602,875 _____

8. 6,096,089 _____

9. 673,218,003 _____

10. 830,002 _____

Name Date Period

Number Translations

EXAMPLE Read the amount written in words. Write the numeral for the amount.

Four thousand, one hundred ninety-two 4,192

Directions Write the following amounts in numerals.

1. Three thousand, five hundred thirty-six _____

2. Five hundred six _____

3. Seven hundred forty-nine _____

4. Five thousand, nine _____

5. Seven thousand, three hundred twenty-one _____

6. Nine thousand, two _____

7. Nine thousand, five hundred _____

8. Thirty-one thousand, four _____

9. Fifty-seven thousand, nine hundred _____

10. Eighty thousand, six hundred thirty-two _____

11. Forty-two thousand, three _____

12. Ninety-one thousand, four hundred eleven _____

13. Seven hundred thousand _____

14. Nine hundred thousand, sixty-four _____

15. Seven hundred seventy-one thousand, five hundred forty-nine _____

16. Four hundred fifty-five million _____

17. Three hundred five million, twenty-eight thousand, two _____

18. Eight thousand, eleven _____

19. Three hundred sixty-three thousand, five hundred four _____

20. Seventy thousand, nine hundred forty-two _____

Name Date Period

Rounding Whole Numbers

EXAMPLE Read the number. Round the number to the nearest tens place. Round numbers 5–9 up. Round numbers 1–4 down.

26 = 30

Directions Round these numbers to the nearest tens place.

1. 48 = _____ **7.** 5 = _____ **13.** 4 = _____

2. 305 = _____ **8.** 803 = _____ **14.** 18 = _____

3. 4,056 = _____ **9.** 617 = _____ **15.** 102,005 = _____

4. 408 = _____ **10.** 61,092 = _____ **16.** 4,506 = _____

5. 9,911 = _____ **11.** 777 = _____ **17.** 9 = _____

6. 72,099 = _____ **12.** 290 = _____ **18.** 61 = _____

Directions Round these numbers to the nearest hundreds place.

19. 693 = _____ **25.** 29 = _____ **31.** 34,988 = _____

20. 349 = _____ **26.** 3,002,091 = _____ **32.** 89 = _____

21. 9,012 = _____ **27.** 71 = _____ **33.** 129,999 = _____

22. 7,521 = _____ **28.** 91,029 = _____ **34.** 10,891 = _____

23. 43,071 = _____ **29.** 6,018 = _____ **35.** 509 = _____

24. 102,009 = _____ **30.** 33,951 = _____ **36.** 780 = _____

Directions Round these numbers to the nearest thousands place.

37. 199 = _____ **42.** 90,098 = _____ **47.** 298 = _____

38. 499 = _____ **43.** 1,058 = _____ **48.** 78,475 = _____

39. 1,500 = _____ **44.** 501 = _____ **49.** 470,512 = _____

40. 25,509 = _____ **45.** 99 = _____ **50.** 19,000 = _____

41. 999 = _____ **46.** 301 = _____

Name Date Period

Addition of Whole Numbers

EXAMPLE Write the problem in vertical form. Add.

18 + 162 + 171 + 8 = 359

$$\begin{array}{r} {\scriptstyle 1\,1} \\ 18 \\ 162 \\ 171 \\ +\ \ 8 \\ \hline 359 \end{array}$$

Directions Rewrite the following addends in the vertical form and add.

1. 32 + 141 + 68 + 122 = _____

2. 4 + 37 + 812 + 774 + 1 = _____

3. 8 + 35 + 77 + 273 + 65 = _____

4. 54 + 76 + 90 + 725 = _____

5. 701 + 33 + 83 + 61 + 374 = _____

6. 7 + 837 + 504 + 91 + 522 = _____

7. 93 + 705 + 866 + 73 = _____

8. 45 + 38 + 401 + 5,000 = _____

9. 86 + 59 + 63 + 27 + 105 = _____

10. 395 + 57 + 82 + 273 + 88 = _____

11. 304 + 771 + 826 + 776 = _____

12. 366 + 8,261 + 8,837 + 912 = _____

13. 6,372 + 75 + 908 + 76 = _____

14. 874 + 7,601 +406 + 837 = _____

15. 7,091 + 5,308 + 354 + 34 = _____

16. 645 + 823 + 806 + 7,735 = _____

17. 6,657 + 4,321 + 7,341 = _____

18. 905 + 624 + 861 + 968 = _____

19. 6,241 + 8,548 + 9,092 = _____

20. 558 + 523 + 128 + 8,241 = _____

21. 264 + 63 + 7,253 + 2 = _____

22. 73 + 8,263 + 78 + 521 = _____

23. 42 + 3,547 + 8,142 + 467 = _____

24. 8,263 + 990 + 352 + 37 = _____

25. 7,364 + 364 + 902 + 36 = _____

26. 889 + 902 + 836 + 2,431 = _____

27. 390 + 263 + 7,746 + 477 = _____

28. 3,746 + 7,500 + 9,928 + 388 = _____

29. 6,635 + 809 + 300 + 646 = _____

30. 9,745 + 4,869 + 7,089 + 3,745 = _____

31. 36 + 2,006 + 215 + 116 = _____

32. 2,117 + 3,591 + 6,711 + 2,883 = _____

33. 7,001 + 375 + 6 + 39 = _____

Directions Solve the following word problems with addition.

34. Mark collects 178 pounds of scrap iron and 85 pounds of copper. Find the total weight of the metal. _____

35. Tara purchases 280 square feet of carpet for her living room and 250 square feet for her bedroom. Find the total number of square feet she purchases. _____

Name Date Period

Subtraction of Whole Numbers

EXAMPLE Write the problem in vertical form. Subtract.

From 821 subtract 71. 750

$$\begin{array}{r} {\scriptstyle 7\,12} \\ 8\not{2}\not{1} \\ -\ \ 71 \\ \hline 750 \end{array}$$

Directions Rewrite these subtraction problems in the vertical form. Then subtract.

1. 694 − 22 = _____

2. From 384 subtract 75. _____

3. 602 − 113 = _____

4. From 102 subtract 89. _____

5. 856 − 773 = _____

6. Subtract 871 from 1,029. _____

7. 552 − 498 = _____

8. Subtract 528 from 717. _____

9. 4,852 − 665 = _____

10. From 3,810 subtract 1,922. _____

11. 3,952 − 3,877 = _____

12. Subtract 9,099 from 10,099. _____

13. 12,923 − 8,973 = _____

14. From 16,242 subtract 10,987. _____

15. 3,049 − 1,906 = _____

16. Subtract 786 from 25,004. _____

17. 46,974 − 18,860 = _____

18. From 65,208 subtract 56,987. _____

19. 7,890 − 5,699 = _____

20. Subtract 61,098 from 87,987. _____

21. 67,951 − 56,508 = _____

22. From 10,001 subtract 9,802. _____

23. 78,000 − 6,784 = _____

24. Subtract 675 from 1,000. _____

25. 362,900 − 87,098 = _____

26. Subtract 81,321 from 601,030. _____

27. 70,981 − 69,673 = _____

28. From 508,821 subtract 91,055. _____

Directions Solve the following word problems with subtraction.

29. Van sells 185 tickets to the school's Staff Talent Show.
If he was given 350 tickets to sell, how many does he have left to sell? _____

30. Cassie plans a 475-mile trip. She drives 296 miles the first day.
How many miles must she drive the second day to complete her trip? _____

Name Date Period

Multiplication Practice

EXAMPLE Multiply the number in the left column by the number in the top row.

	4
3	12

Directions Fill in the multiplication facts. Multiply each number in the left column by each number on the top row. Write the product of each pair of numbers in the box where the column and the row meet.

1.

×	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0								
1	0	1	2								
2											
3											
4											
5											
6											
7											
8											
9											
10											

2.

×	6	2	3	0	9	10	8	7	5	4	1
2											
9											
5											
4											
8											
0											
7											
6											
3											
1											
10											

Name Date Period

Multiplication by Powers of Ten

EXAMPLES

When you multiply a number by 10, write the number. Then write a zero at the end. $235 \times 10 = 2{,}350$

When you multiply a number by 100, write the number. Then write two zeros at the end. $235 \times 100 = 23{,}500$

When you multiply a number by 1,000, write the number. Then write three zeros at the end. $235 \times 1{,}000 = 235{,}000$

Directions Multiply by these powers of ten.

1. $325 \times 10 =$ _____

2. $421 \times 100 =$ _____

3. $4{,}631 \times 10 =$ _____

4. $6{,}023 \times 100 =$ _____

5. $702 \times 100 =$ _____

6. $3{,}011 \times 1{,}000 =$ _____

7. $3{,}203 \times 100 =$ _____

8. $26{,}190 \times 10 =$ _____

9. $1{,}043 \times 100 =$ _____

10. $50{,}783 \times 1{,}000 =$ _____

11. $72 \times 1{,}000 =$ _____

12. $38 \times 1{,}000 =$ _____

13. $106 \times 100 =$ _____

14. $81 \times 100 =$ _____

15. $4{,}123 \times 10 =$ _____

16. $3{,}007 \times 1{,}000 =$ _____

17. $962 \times 1{,}000 =$ _____

18. $300 \times 10 =$ _____

19. $4{,}305 \times 10 =$ _____

20. $4{,}020 \times 1{,}000 =$ _____

21. $412 \times 1{,}000 =$ _____

22. $906 \times 1{,}000 =$ _____

23. $10{,}802 \times 100 =$ _____

24. $104 \times 100 =$ _____

25. $56 \times 10 =$ _____

26. $13 \times 100 =$ _____

27. $9 \times 1{,}000 =$ _____

28. $83 \times 1{,}000 =$ _____

29. $183 \times 1{,}000 =$ _____

30. $7 \times 1{,}000 =$ _____

31. $801 \times 100 =$ _____

32. $334 \times 10 =$ _____

33. $632 \times 10 =$ _____

34. $4{,}567 \times 100 =$ _____

35. $5 \times 100 =$ _____

36. $20{,}304 \times 100 =$ _____

37. $100 \times 1{,}000 =$ _____

38. $20{,}011 \times 100 =$ _____

39. $4{,}302 \times 100 =$ _____

40. $10{,}001 \times 100 =$ _____

Name Date Period

Multiplication of Whole Numbers

EXAMPLE Write the problem in vertical form. Multiply.

$52 \times 42 =$ 2,184

$$\begin{array}{r} 52 \\ \times\ 42 \\ \hline 104 \\ +\ 208 \\ \hline 2{,}184 \end{array}$$

Directions Rewrite these multiplication problems in the vertical form and multiply.

1. $24 \times 22 =$ _____

2. $61 \times 18 =$ _____

3. $201 \times 43 =$ _____

4. $85 \times 72 =$ _____

5. $712 \times 66 =$ _____

6. $819 \times 94 =$ _____

7. $465 \times 20 =$ _____

8. $762 \times 300 =$ _____

9. $301 \times 300 =$ _____

10. $784 \times 100 =$ _____

11. $629 \times 150 =$ _____

12. $607 \times 515 =$ _____

13. $5{,}763 \times 501 =$ _____

14. $7{,}114 \times 35 =$ _____

15. $920 \times 724 =$ _____

16. $856 \times 326 =$ _____

17. $3{,}021 \times 307 =$ _____

18. $638 \times 800 =$ _____

19. $4{,}160 \times 110 =$ _____

20. $8{,}522 \times 574 =$ _____

21. $5{,}021 \times 4{,}000 =$ _____

22. $7{,}000 \times 387 =$ _____

23. $5{,}448 \times 673 =$ _____

24. $7{,}361 \times 6{,}000 =$ _____

25. $4{,}000 \times 3{,}000 =$ _____

26. $4{,}000 \times 4{,}000 =$ _____

27. $3{,}500 \times 5{,}100 =$ _____

28. $6{,}702 \times 1{,}023 =$ _____

Directions Solve the following word problems with multiplication.

29. Leah runs 4 miles every day before school for exercise. If she runs 179 days, how many miles will she run? _____

30. Each student in Mr. Brown's class donates 15 sandwiches to the school picnic. If 38 students are in Mr. Brown's class, how many sandwiches are donated? _____

Name Date Period

Division of Whole Numbers

EXAMPLE Write the problem in standard form. Divide.

168 ÷ 6 = 28

$$\begin{array}{r} 28 \\ 6\overline{)168} \\ -\ 12 \\ \hline 48 \\ -\ 48 \\ \hline 0 \end{array}$$

Directions Rewrite the following division problems in the standard form and divide.

1. 128 ÷ 4 = _____

2. 477 ÷ 9 = _____

3. 266 ÷ 7 = _____

4. 480 ÷ 5 = _____

5. 824 ÷ 8 = _____

6. 864 ÷ 4 = _____

7. 1,290 ÷ 10 = _____

8. 1,771 ÷ 7 = _____

9. 1,008 ÷ 9 = _____

10. 3,069 ÷ 9 = _____

11. 948 ÷ 12 = _____

12. 1,472 ÷ 16 = _____

13. 1,360 ÷ 16 = _____

14. 2,160 ÷ 12 = _____

15. 3,036 ÷ 6 = _____

16. 8,844 ÷ 11 = _____

17. 6,030 ÷ 3 = _____

18. 5,400 ÷ 6 = _____

19. 1,710 ÷ 6 = _____

20. 1,820 ÷ 13 = _____

21. 14,910 ÷ 21 = _____

22. 15,625 ÷ 25 = _____

23. 12,720 ÷ 12 = _____

24. 13,797 ÷ 27 = _____

25. 27,060 ÷ 60 = _____

26. 21,350 ÷ 35 = _____

27. 11,216 ÷ 16 = _____

28. 12,030 ÷ 30 = _____

Directions Solve these word problems with division.

29. The Jiffy Messenger Service travels a total of 2,954 miles in one 7-day week. How many miles do the messengers average each day?

_____

30. Marvin collects 1,170 bottle tops over a 45-day period. How many bottle tops does he average per day?

_____

Name Date Period

More Division of Whole Numbers

EXAMPLE

Write the problem in standard form.
1,333 ÷ 9 = _____ Divide.

Express the remainder as a fraction.
Write the remainder over the divisor.

$$\begin{array}{r} 148\ \frac{1}{9} \\ 9\overline{)1{,}333} \\ -\ 9 \\ \hline 43 \\ -\ 36 \\ \hline 73 \\ -\ 72 \\ \hline 1 \end{array}$$

Directions Rewrite the following division problems in the standard form and divide. Express the remainders in fractional form.

1. 1,237 ÷ 6 = _____

2. 898 ÷ 6 = _____

3. 415 ÷ 6 = _____

4. 2,115 ÷ 11 = _____

5. 749 ÷ 6 = _____

6. 1,218 ÷ 12 = _____

7. 863 ÷ 7 = _____

8. 3,017 ÷ 15 = _____

9. 6,915 ÷ 4 = _____

10. 812 ÷ 82 = _____

11. 1,367 ÷ 17 = _____

12. 3,575 ÷ 28 = _____

13. 1,992 ÷ 10 = _____

14. 2,115 ÷ 63 = _____

15. 8,175 ÷ 35 = _____

16. 7,167 ÷ 20 = _____

17. 9,063 ÷ 75 = _____

18. 10,613 ÷ 53 = _____

19. 8,891 ÷ 22 = _____

20. 7,776 ÷ 78 = _____

21. 3,820 ÷ 45 = _____

22. 29,666 ÷ 30 = _____

23. 6,770 ÷ 65 = _____

24. 41,080 ÷ 80 = _____

25. 12,161 ÷ 11 = _____

26. 58,775 ÷ 40 = _____

27. 23,815 ÷ 15 = _____

28. 91,090 ÷ 90 = _____

Directions Solve these word problems with division. Express remainders in fractional form.

29. Maija's mother owned her car for 9 years, driving a total of 136,910 miles. Find the average number of miles driven per year. _____

30. Daniel drove his car 816 miles using 22 gallons of gas. Compute Daniel's gas mileage by dividing the number of miles driven by the number of gallons used. _____

Name Date Period

Dividing Numbers by Powers of Ten

EXAMPLE Write the problem in standard form and divide.

480 ÷ 10 =

$$\begin{array}{r} 48 \\ 10\overline{)480} \\ -\ 40 \\ \hline 80 \\ -\ 80 \\ \hline 0 \end{array}$$

Or move the decimal point one place to the left for each zero in the divisor.

48.0 ÷ 10 =

Directions Divide by these powers of ten.

1. 840 ÷ 10 = _____

2. 65,000 ÷ 100 = _____

3. 2,000 ÷ 100 = _____

4. 4,630 ÷ 10 = _____

5. 9,600 ÷ 100 = _____

6. 140,000 ÷ 1,000 = _____

7. 191,000 ÷ 10 = _____

8. 920,000 ÷ 100 = _____

9. 62,000 ÷ 100 = _____

10. 35,600 ÷ 100 = _____

11. 385,000 ÷ 100 = _____

12. 25,000,000 ÷ 1,000 = _____

13. 4,000,000 ÷ 1,000 = _____

14. 806,000 ÷ 10 = _____

15. 962,000 ÷ 100 = _____

16. 305,000 ÷ 100 = _____

17. 1,800,000 ÷ 1,000 = _____

18. 600,000 ÷ 1,000 = _____

19. 581,000 ÷ 10 = _____

20. 720,600 ÷ 100 = _____

21. 451,000 ÷ 1,000 = _____

22. 390,000 ÷ 10 = _____

23. 680,000 ÷ 100 = _____

24. 4,060,300 ÷ 10 = _____

25. 19,600 ÷ 10 = _____

26. 9,603,000 ÷ 1,000 = _____

27. 5,000,000 ÷ 100 = _____

28. 7,000,000 ÷ 10 = _____

29. 8,000,000 ÷ 100 = _____

30. 123,000 ÷ 1,000 = _____

31. 96,000,000 ÷ 1,000 = _____

32. 43,000 ÷ 1,000 = _____

33. 43,070,600 ÷ 10 = _____

34. 8,000,000 ÷ 10,000 = _____

35. 902,000 ÷ 100 = _____

36. 304,000,000 ÷ 100 = _____

37. 201,111,000 ÷ 10 = _____

38. 76,000,000 ÷ 1,000 = _____

39. 50,000 ÷ 10,000 = _____

40. 240,000 ÷ 10,000 = _____

Name Date Period

Basic Operations with Whole Numbers

EXAMPLES

Add.
$$\begin{array}{r} {\scriptstyle 2\ 2} \\ 354 \\ 356 \\ 765 \\ +\ 87 \\ \hline 1{,}562 \end{array}$$

Subtract.
$$\begin{array}{r} {\scriptstyle 1\ 12\ 9\ 14} \\ 2{,}3\not{0}\not{4} \\ -\ 567 \\ \hline 1{,}737 \end{array}$$

Multiply.
$$\begin{array}{r} 23 \\ \times\ 44 \\ \hline 092 \\ +\ 92 \\ \hline 1{,}012 \end{array}$$

Divide.
$$\begin{array}{r} 1{,}145 \\ 3\overline{)\,3{,}435} \\ -\ 3 \\ \hline 0 \\ 4 \\ -\ 3 \\ \hline 13 \\ -\ 12 \\ \hline 15 \\ -\ 15 \end{array}$$

Directions Add.

1. 243 + 321 + 132 + 68 = _____

2. 5,067 + 23 + 505 + 40 = _____

3. 1,102 + 705 + 4,033 = _____

4. 5,122 + 567 + 504 + 3,402 = _____

5. 30,304 + 4,030 + 20,300 + 1,102 = _____

6. 203,340 + 94,059 + 304,450 = _____

7. 2,000 + 90,089 + 50,481 = _____

8. 10,223 + 4,055 + 506 + 8,690 = _____

Directions Subtract.

9. 2,304 − 567 = _____

10. 304,119 − 4,053 = _____

11. 30,400 − 19,234 = _____

12. 102,556 − 9,806 = _____

13. 134,505 − 5,968 = _____

14. 900,800 − 203,788 = _____

15. 6,578,009 − 456,801 = _____

16. 340,599 − 9,875 = _____

Directions Multiply.

17. 23 × 44 = _____

18. 304 × 32 = _____

19. 579 × 23 = _____

20. 3,011 × 44 = _____

21. 4,503 × 23 = _____

22. 4,053 × 206 = _____

23. 5,098 × 2,304 = _____

24. 40,577 × 3,092 = _____

Directions Divide. Write the remainders in the fractional form.

25. 3,435 ÷ 3 = _____

26. 2,034 ÷ 9 = _____

27. 49,571 ÷ 9 = _____

28. 30,455 ÷ 5 = _____

29. 46,570 ÷ 45 = _____

30. 30,575 ÷ 25 = _____

Name Date Period

Averages

EXAMPLE Find the average of these numbers: 25, 73, 80, 73, 33, 95

Step 1 Add.

$$\begin{array}{r} 25 \\ 73 \\ 80 \\ 73 \\ 33 \\ +\ 95 \\ \hline 379 \end{array}$$

Step 2 Divide.

$$\begin{array}{r} 63.16 \approx 63.2 \\ 6\overline{)\,379.00} \\ -\ 36 \\ \hline 19 \\ -\ 18 \\ \hline 1\,0 \\ -\ 6 \\ \hline 40 \\ -\ 36 \end{array}$$

Directions Compute the averages for the sets of numbers. Round to the nearest tenth.

1. 14, 12, 15, 11, 12, 13 _____

2. 83, 78, 53, 92, 67, 27 _____

3. 20, 28, 19, 31, 22, 18, 17, 30 _____

4. 78, 98, 77, 67, 75, 90, 80, 90, 80, 75, 70 _____

5. 30, 31, 37, 33, 38, 35, 32, 39, 34, 36 _____

6. 44, 46, 64, 66, 62, 69, 41, 40 _____

7. 103, 110, 152, 173, 177, 100, 150, 175, 152 _____

8. 205, 273, 198, 350, 220, 180, 280, 220 _____

9. 58, 74, 47, 83, 65, 36, 45, 46, 70, 53, 55, 38 _____

10. 163, 219, 300, 512, 375, 602, 735, 638, 881 _____

11. 3,004, 3,210, 3,387, 3,652, 3,470, 3,521, 3,980, 3,922 _____

12. 5,738, 5,755, 5,746, 5,789, 5,736, 5,725, 5,756, 5,731 _____

13. 230, 310, 222, 725, 600, 390, 512, 525, 510, 400, 500, 683 _____

14. 3,021, 5,361, 2,630, 6,110, 4,002, 3,006, 4,102, 4,120, 4,972, 3,500, 2,310 _____

15. 4,589, 4,530, 4,520, 4,500, 4,530, 4,528, 4,501, 4,554 _____

16. 7,800, 7,853, 7,835, 7,850, 7,812, 7,856, 7,851, 7,820 _____

17. 35, 78, 95, 83, 62, 89, 35, 60, 40, 66, 10, 31, 62, 89, 95 _____

18. 1,239, 1,264, 1,220, 1,250, 1,235, 1,260, 1,285, 1,240, 1,200, 1,290, 1,206 _____

Directions Solve these word problems by computing the average. Round the answers to the nearest tenth.

19. Deborah works as a part-time car mechanic. She works 26 hours her first week. What is her average number of hours worked per day for four days? _____

20. The band sells 523 tickets to its annual concert. There are 13 ticket sellers. Find the average number of tickets sold by each seller. _____

Name Date Period

Exponents

EXAMPLE Read the number. Change the number into a problem and write the amount.

$2^3 = 2 \times 2 \times 2 =$ 8

Directions Express the following without exponents.

1. $3^2 =$	_____	**21.** $20^3 =$	_____	**41.** $4^5 =$	_____
2. $4^2 =$	_____	**22.** $3^2 =$	_____	**42.** $21^2 =$	_____
3. $5^3 =$	_____	**23.** $5^4 =$	_____	**43.** $3^3 =$	_____
4. $4^3 =$	_____	**24.** $12^2 =$	_____	**44.** $10^6 =$	_____
5. $6^2 =$	_____	**25.** $10^3 =$	_____	**45.** $23^2 =$	_____
6. $10^2 =$	_____	**26.** $3^5 =$	_____	**46.** $14^2 =$	_____
7. $8^2 =$	_____	**27.** $22^3 =$	_____	**47.** $50^2 =$	_____
8. $2^5 =$	_____	**28.** $17^2 =$	_____	**48.** $100^2 =$	_____
9. $9^3 =$	_____	**29.** $15^2 =$	_____	**49.** $19^2 =$	_____
10. $5^2 =$	_____	**30.** $10^4 =$	_____	**50.** $33^2 =$	_____
11. $4^4 =$	_____	**31.** $12^3 =$	_____	**51.** $13^3 =$	_____
12. $2^4 =$	_____	**32.** $13^2 =$	_____	**52.** $16^2 =$	_____
13. $8^3 =$	_____	**33.** $20^2 =$	_____	**53.** $25^3 =$	_____
14. $9^2 =$	_____	**34.** $25^2 =$	_____	**54.** $17^3 =$	_____
15. $7^2 =$	_____	**35.** $15^3 =$	_____	**55.** $14^3 =$	_____
16. $10^5 =$	_____	**36.** $22^2 =$	_____	**56.** $5^5 =$	_____
17. $3^4 =$	_____	**37.** $11^3 =$	_____	**57.** $10^7 =$	_____
18. $6^3 =$	_____	**38.** $6^4 =$	_____	**58.** $11^4 =$	_____
19. $7^3 =$	_____	**39.** $2^6 =$	_____	**59.** $12^4 =$	_____
20. $11^2 =$	_____	**40.** $18^2 =$	_____	**60.** $10^9 =$	_____

Name Date Period

Order of Operations

EXAMPLE Follow the order of operations. $2 + 4 \times 2 =$ _____

$2 + \quad 8 \quad = \quad 10$

Directions Find the answers. Perform the operations in the correct order.

1. $3 + 5 \times 6 =$ _____

2. $3 \times 4 + 6 - 4 =$ _____

3. $4 \times 8 + 16 \div 2 =$ _____

4. $5 \times 2 - 6 \div 2 =$ _____

5. $4^2 \times 2 + 5 - 32 =$ _____

6. $3 \times 2 \times 2^3 - 4^2 =$ _____

7. $7 + 6 \times 2 - 2 + 2^3 =$ _____

8. $18 - 2 \times 4^2 \div 4 =$ _____

9. $10 + 8 \times 6 \div 12 - 2 =$ _____

10. $13 - 4 \times 5 \div 2 + 10 =$ _____

11. $15 \times 3 - 5^2 + 10 =$ _____

12. $7^2 + 2^4 - 2^3 =$ _____

13. $4 + 17 - 3 \times 7 =$ _____

14. $12^2 - 10^2 + 5 \times 2 =$ _____

15. $10^2 - 2 \times 4 + 3^2 =$ _____

16. $11^2 + 23 - 2^3 + 9 =$ _____

17. $20 - 12 \div 6 \times 3 =$ _____

18. $4^3 - 3 \times 12 \div 6 =$ _____

19. $15 + 4 - 11 + 2^5 =$ _____

20. $12 \times 2 \div 3 \times 2 + 3 =$ _____

21. $8 \times 6 \div 4 - 12 \div 6 =$ _____

22. $2^3 \times 3 \div 6 + 12 - 3 =$ _____

23. $45 \div 15 + 10 - 2^3 =$ _____

24. $15 \div 3 - 5 + 10^2 =$ _____

25. $12^2 \div 6 - 20 + 7 =$ _____

26. $8^2 + 9 \times 3 - 10 =$ _____

27. $18 \div 3^2 - 2 + 5^2 =$ _____

28. $5^3 \div 5 - 10 + 2^3 =$ _____

29. $81 \div 3^2 - 6 + 12 \div 2 =$ _____

30. $3 \times 6 \div 2 - 5 + 7 =$ _____

31. $10^2 \div 5^2 + 5 \times 6 \div 2 =$ _____

32. $25 \div 5^2 \times 5 + 5 - 10 =$ _____

33. $100 \div 10 \times 2^2 + 8 =$ _____

34. $18 - 9 \times 2 \div 3 + 3^2 =$ _____

35. $50 - 40 + 4 \times 7 =$ _____

36. $28 \div 4 \times 6 - 20 =$ _____

37. $3^3 \times 2^2 + 20 \div 2 =$ _____

38. $6^2 \times 3 \div 2 - 4^2 =$ _____

39. $14 \div 2 \times 3 - 21 =$ _____

40. $16 \times 2 \div 4 - 2 + 10 =$ _____

Name Date Period

Factors

EXAMPLE

Factor the number.

F_{15} 1×15
3×5

Choose the correct factors.

a. 1, 5, 10, 15
b. 1, 2, 3, 5
c. 1, 3, 5, 15
d. 1, 3, 6, 12

Directions Circle the answer that has the correct factors.

1. 24
a. 1, 2, 4, 6, 8, 12, 14
b. 1, 2, 4, 10, 12, 24
c. 1, 2, 3, 4, 6, 8, 12, 24
d. 2, 4, 6, 8, 10, 12, 24

2. 16
a. 1, 4, 8, 16
b. 1, 2, 4, 16
c. 1, 2, 4, 8, 16
d. 1, 2, 4, 8, 16, 32

3. 32
a. 1, 2, 8, 16, 32
b. 1, 2, 8, 16, 32, 64
c. 1, 2, 4, 8, 16, 32
d. 2, 4, 6, 8, 10, 32

4. 8
a. 2, 4, 8
b. 1, 2, 4, 8
c. 1, 2, 4, 8, 16
d. 1, 2, 4, 8, 12, 24

5. 10
a. 2, 5
b. 1, 2, 5, 10
c. 1, 2, 5, 10, 20
d. 1, 2, 5

6. 52
a. 1, 12, 24, 26, 30, 52
b. 26, 52
c. 1, 2, 4, 13, 26, 52
d. 1, 13, 15, 52

7. 14
a. 2, 7, 11, 14
b. 1, 2, 7, 14, 28
c. 2, 4, 7, 14
d. 1, 2, 7, 14

8. 42
a. 1, 6, 7, 12, 21, 42
b. 1, 2, 3, 6, 7, 14, 21, 42
c. 1, 6, 12, 42
d. 1, 2, 4, 12, 21, 42

9. 13
a. 1, 7, 13
b. 1, 13
c. 1, 7, 13, 26
d. 1, 2, 13, 19

10. 26
a. 1, 2, 20, 26
b. 1, 13, 26
c. 1, 2, 13, 26
d. 1, 26

11. 36
a. 2, 3, 4, 6, 8, 12, 24
b. 1, 2, 3, 4, 6, 9, 12, 18, 36
c. 1, 2, 4, 6, 8, 12, 36
d. 1, 3, 4, 6, 8, 12, 36

12. 12
a. 2, 3, 4, 6, 12
b. 3, 4, 6, 12, 24
c. 2, 4, 6, 24
d. 1, 2, 3, 4, 6, 12

13. 18
a. 1, 2, 3, 6, 9, 18
b. 1, 2, 3, 6, 9, 18, 32
c. 1, 2, 3, 6, 9, 18, 36
d. 1, 2, 3, 4, 6, 7, 18

14. 20
a. 2, 20
b. 2, 5, 10, 15, 20
c. 1, 2, 5, 10, 15, 20
d. 1, 2, 4, 5, 10, 20

15. 22
a. 1, 11, 22
b. 1, 11, 22, 44
c. 1, 2, 11, 22
d. 1, 22, 44

Name Date Period

Multiples

EXAMPLE M_4 Find the multiples of 4.

4×0 4×1 4×2 4×3 4×4
0 4 8 12 16

Choose the correct multiples.

a. 0, 1, 2, 4
b. 0, 4, 10, 12
c. 0, 1, 4, 8
(d.) 0, 4, 8, 12

Directions Circle the answer that has the correct multiples. Note: Some multiples may be missing from a correct answer.

1. M_2
- **a.** 2, 4, 6, 8, 11
- **b.** 0, 4, 6, 8, 12
- **c.** 0, 2, 4, 5, 6, 8
- **d.** 0, 2, 3, 4, 5, 6

2. M_{11}
- **a.** 0, 1, 11, 22, 121
- **b.** 0, 11, 22, 33, 44, 56
- **c.** 11, 22, 33, 111
- **d.** 0, 11, 22, 33, 121

3. M_4
- **a.** 0, 2, 4, 6, 8, 16
- **b.** 4, 8, 16, 32, 36
- **c.** 0, 4, 6, 8, 12, 20
- **d.** 0, 14, 28, 56, 100

4. M_6
- **a.** 0, 2, 4, 6, 8, 9
- **b.** 0, 6, 12, 18, 24
- **c.** 1, 6, 12, 18, 24
- **d.** 1, 3, 6, 9, 18, 24

5. M_{30}
- **a.** 0, 10, 30, 60, 90
- **b.** 0, 30, 60, 90, 120
- **c.** 0, 15, 30, 45, 60
- **d.** 1, 15, 30, 40, 60

6. M_3
- **a.** 0, 3, 5, 6, 9, 12
- **b.** 3, 6, 9, 12, 14
- **c.** 0, 3, 6, 12, 15
- **d.** 1, 3, 6, 9, 12, 15

7. M_7
- **a.** 0, 7, 14, 28, 56, 112
- **b.** 0, 3, 7, 14, 28, 35
- **c.** 0, 7, 11, 22, 33, 44
- **d.** 1, 7, 14, 28, 35, 40

8. M_9
- **a.** 0, 9, 18, 27, 36
- **b.** 0, 9, 27, 38, 45
- **c.** 0, 19, 38, 76
- **d.** 0, 1, 2, 3, 4, 5

9. M_{20}
- **a.** 0, 20, 40, 60, 80
- **b.** 0, 20, 30, 40, 50
- **c.** 1, 20, 40, 60, 80
- **d.** 1, 10, 20, 30, 40

10. M_{40}
- **a.** 0, 40, 80, 120, 160
- **b.** 1, 40, 80, 120, 160
- **c.** 1, 20, 40, 60, 80
- **d.** 0, 20, 40, 60, 80

11. M_5
- **a.** 0, 5, 10, 12, 15
- **b.** 0, 10, 15, 20, 30
- **c.** 1, 5, 10, 15, 20
- **d.** 0, 10, 18, 20, 25

12. M_{10}
- **a.** 0, 10, 15, 20, 25
- **b.** 0, 5, 10, 15, 20
- **c.** 10, 15, 20, 25, 30
- **d.** 0, 10, 30, 50, 100

13. M_{12}
- **a.** 0, 12, 24, 36, 44
- **b.** 0, 12, 16, 24, 28
- **c.** 0, 12, 24, 36, 48
- **d.** 0, 10, 12, 14, 16

14. M_{13}
- **a.** 13, 29, 39, 52
- **b.** 0, 13, 23, 39
- **c.** 1, 13, 26, 52
- **d.** 0, 13, 26, 39

15. M_{50}
- **a.** 1, 50, 100, 150
- **b.** 0, 50, 100, 150
- **c.** 1, 25, 50, 75
- **d.** 0, 10, 15, 25

Name Date Period

Prime and Composite Numbers

EXAMPLE Identify all the factors of a number. $F_9 = 1, 3, 9$

Tell whether the number is a prime or composite number.

9 has three factors, so it is a composite number.

Directions Write *prime* or *composite* for each number given.

1. 23	_____	**19.** 21	_____	**37.** 12	_____
2. 25	_____	**20.** 44	_____	**38.** 7	_____
3. 45	_____	**21.** 17	_____	**39.** 58	_____
4. 19	_____	**22.** 26	_____	**40.** 98	_____
5. 84	_____	**23.** 102	_____	**41.** 62	_____
6. 29	_____	**24.** 77	_____	**42.** 60	_____
7. 73	_____	**25.** 42	_____	**43.** 22	_____
8. 37	_____	**26.** 54	_____	**44.** 49	_____
9. 55	_____	**27.** 4	_____	**45.** 31	_____
10. 78	_____	**28.** 100	_____	**46.** 1	_____
11. 15	_____	**29.** 27	_____	**47.** 400	_____
12. 220	_____	**30.** 79	_____	**48.** 2	_____
13. 110	_____	**31.** 55	_____	**49.** 3	_____
14. 6	_____	**32.** 204	_____	**50.** 300	_____
15. 120	_____	**33.** 41	_____		
16. 72	_____	**34.** 155	_____		
17. 350	_____	**35.** 29	_____		
18. 410	_____	**36.** 57	_____		

Name Date Period

Sets of Numbers

EXAMPLE Identify the set of even numbers. Even numbers are multiples of 2.

1, 2, 3, 5, 6, 8, 10, 12

Set of even numbers 2, 6, 8, 10, 12

Directions Write the sets from the given numbers.

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20,

21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37,

38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

1. The set of even numbers

_____

2. The set of odd numbers

_____

3. The set of prime numbers

_____

4. The set of numbers that will divide into 100 with zero as a remainder

_____

5. The set of numbers that is multiples of 3 _____

6. The set of numbers that is multiples of 6 _____

7. The set of numbers that is multiples of 10 _____

8. The set of numbers that is multiples of 100 _____

9. The set of numbers that is factors of 100 _____

10. The set of numbers that is factors of 20 _____

11. The set of numbers that is factors of 10 _____

12. The set of numbers that is factors of 8 _____

13. The set of numbers that is factors of 6 _____

14. The set of numbers that is factors of 30 _____

15. The set of numbers that is factors of 12 _____

Prime Numbers

EXAMPLE

List prime numbers from the given set.

2, 3, 4, 5

Identify prime numbers, which are numbers that have exactly 2 factors.

2 has 2 factors
3 has 2 factors
4 has 3 factors
5 has 2 factors

Prime numbers are 2, 3, 5.

Directions Write the sets from the given numbers.

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20,

21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37,

38, 39, 40, 41, 42, 43, 44, 45

1. List the prime numbers in order from smallest to largest from the set given.

_____

2. List the even numbers in order from smallest to largest from the set given.

_____

3. List the odd numbers in order from smallest to largest from the set given.

_____

4. Add pairs of prime numbers. Exclude 2 from your additions.

Can you predict an odd or even answer? _____ Summarize your results.

_____

5. Add pairs of odd numbers. Can you predict an odd or even answer? _____
Summarize your results.

_____

6. Add pairs of even numbers. Can you predict an odd or even answer? _____
Summarize your results.

_____

Find the three prime addends for each of the following numbers.

7. 12 = _____

8. 19 = _____

9. 14 = _____

10. 21 = _____

Name Date Period

Divisibility Tests

EXAMPLE Use the divisibility test to determine if this number is divisible by 3.

123 Add the digits. 1 + 2 + 3 = 6

Determine if the sum is a multiple of 3. 6 is a multiple of 3.
123 is divisible by 3.

Directions Perform the divisibility test to complete the chart.
Write *Yes* or *No* for each space.

Number	Divisible by 2?	Divisible by 3?	Divisible by 5?
1. 12,034			
2. 31,241			
3. 21,453			
4. 3,040,511			
5. 989,798			
6. 10,233			
7. 20,394			
8. 3,012,211			
9. 50,321			
10. 293,100			

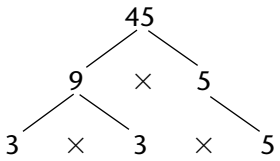
Number	Divisible by 4?	Divisible by 9?	Divisible by 10?
11. 20,349			
12. 13,536			
13. 12,350			
14. 182,340			
15. 125,350			
16. 30,451			
17. 10,800			
18. 100,237			
19. 584,750			
20. 95,832			

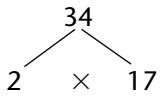
Name Date Period

Prime Factorization

EXAMPLES Complete factor trees to find prime factorization.

Find prime factors for 45 and 34.





Directions Complete factor trees for these numbers.

1. 48

2. 44

3. 64

4. 36

5. 32

6. 28

7. 39

8. 38

9. 72

10. 52

Name Date Period

Least Common Multiple

EXAMPLE Find the LCM (12, 6).

M_{12} = 12, 24, 36

M_6 = 6, 12, 18, 24

LCM (12, 6) = 12

Directions Find the least common multiple and show the steps.

1. Find the LCM (10, 15).

2. Find the LCM (12, 16).

3. Find the LCM (3, 8).

4. Find the LCM (8, 9).

5. Find the LCM (3, 7).

6. Find the LCM (36, 12).

7. Find the LCM (7, 6).

8. Find the LCM (5, 8).

9. Find the LCM (4, 6).

10. Find the LCM (5, 7).

Name Date Period

Least Common Multiple/Greatest Common Factor

EXAMPLES Find the factors. Underline greatest common numbers in both sets.

LCM (3, 5)	GCF (10, 25)
M_3 = {0, 3, 9, 12, <u>15</u>, . . .}	F_{10} = {1, 2, <u>5</u>, 10}
M_5 = {0, 5, 10, <u>15</u>, 20, . . .}	F_{25} = {1, <u>5</u>, 25}
LCM (3, 5) = 15	GCF = 5

Directions Find the least common multiple and show the steps.

1. Find the LCM (11, 33).

_____

_____

_____

2. Find the LCM (5, 16).

_____

_____

_____

3. Find the LCM (15, 12).

_____

_____

_____

4. Find the LCM (12, 10).

_____

_____

_____

Directions Find the greatest common factor.

5. GCF (18, 16) _____

6. GCF (8, 36) _____

7. GCF (12, 15) _____

8. GCF (6, 26) _____

9. GCF (18, 4) _____

10. GCF (14, 4) _____

11. GCF (12, 20) _____

12. GCF (32, 36) _____

13. GCF (12, 16) _____

14. GCF (20, 8) _____

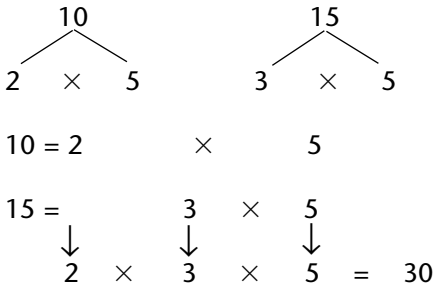
15. GCF (20, 15) _____

Name Date Period

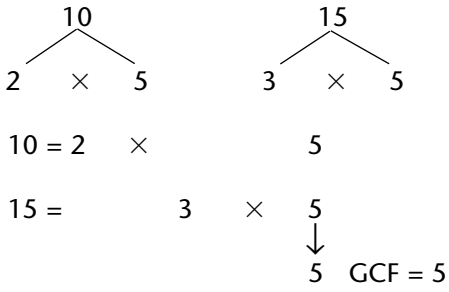
Using Prime Factorization

EXAMPLES

LCM (10, 15)



GCF (10, 15)



Directions Find the least common multiple (LCM) for these pairs of numbers.

1. Find the LCM (25, 15).

2. Find the LCM (5, 12).

3. Find the LCM (16, 18).

4. Find the LCM (27, 9).

Directions Find the greatest common factor (GCF) for each pair of numbers.

5. GCF (10, 25)

6. GCF (20, 30)

7. GCF (22, 77)

8. GCF (14, 8)

9. GCF (22, 55)

10. GCF (44, 48)

Name Date Period

Comparing Fractions

EXAMPLE Cross-multiply numerators and denominators. Compare the products.

$\frac{2}{3}$ $\frac{4}{5}$ 12

$3 \times 4 = 12$

$\frac{2}{3}$ $\frac{4}{5}$ 10

$2 \times 5 = 10$

$\frac{2}{3}$ $\frac{4}{5}$ 10 12

$10 < 12$

Directions Compare the fractions in each pair. Use < or > for each pair.

1. $\frac{3}{5}$ $\frac{4}{7}$

2. $\frac{5}{6}$ $\frac{7}{8}$

3. $\frac{5}{7}$ $\frac{7}{8}$

4. $\frac{2}{5}$ $\frac{4}{1}$

5. $\frac{3}{13}$ $\frac{6}{20}$

6. $\frac{3}{8}$ $\frac{9}{20}$

7. $\frac{6}{11}$ $\frac{5}{9}$

8. $\frac{5}{8}$ $\frac{10}{17}$

9. $\frac{1}{2}$ $\frac{5}{11}$

10. $\frac{2}{13}$ $\frac{4}{15}$

11. $\frac{15}{16}$ $\frac{16}{17}$

12. $\frac{2}{13}$ $\frac{3}{14}$

13. $\frac{1}{8}$ $\frac{2}{13}$

14. $\frac{5}{21}$ $\frac{18}{31}$

15. $\frac{2}{15}$ $\frac{6}{21}$

16. $\frac{7}{13}$ $\frac{6}{32}$

17. $\frac{1}{5}$ $\frac{1}{9}$

18. $\frac{2}{21}$ $\frac{3}{31}$

19. $\frac{1}{3}$ $\frac{2}{7}$

20. $\frac{6}{7}$ $\frac{8}{1}$

21. $\frac{3}{5}$ $\frac{1}{2}$

22. $\frac{2}{8}$ $\frac{4}{17}$

23. $\frac{6}{10}$ $\frac{1}{5}$

24. $\frac{5}{10}$ $\frac{10}{21}$

25. $\frac{4}{7}$ $\frac{5}{11}$

26. $\frac{3}{5}$ $\frac{6}{11}$

27. $\frac{4}{5}$ $\frac{2}{20}$

28. $\frac{6}{11}$ $\frac{5}{22}$

29. $\frac{1}{2}$ $\frac{2}{8}$

30. $\frac{4}{11}$ $\frac{8}{21}$

31. $\frac{9}{10}$ $\frac{4}{5}$

32. $\frac{7}{12}$ $\frac{7}{10}$

33. $\frac{6}{9}$ $\frac{12}{17}$

34. $\frac{4}{12}$ $\frac{2}{7}$

35. $\frac{3}{13}$ $\frac{1}{6}$

36. $\frac{8}{15}$ $\frac{15}{16}$

37. $\frac{3}{8}$ $\frac{5}{13}$

38. $\frac{10}{12}$ $\frac{14}{16}$

39. $\frac{2}{6}$ $\frac{4}{14}$

40. $\frac{1}{12}$ $\frac{4}{24}$

41. $\frac{6}{11}$ $\frac{5}{13}$

42. $\frac{2}{4}$ $\frac{10}{22}$

43. $\frac{8}{10}$ $\frac{4}{40}$

44. $\frac{6}{7}$ $\frac{18}{20}$

45. $\frac{4}{6}$ $\frac{8}{10}$

46. $\frac{6}{10}$ $\frac{2}{4}$

47. $\frac{11}{23}$ $\frac{22}{31}$

48. $\frac{9}{15}$ $\frac{18}{31}$

49. $\frac{10}{11}$ $\frac{20}{23}$

50. $\frac{4}{8}$ $\frac{5}{11}$

51. $\frac{10}{23}$ $\frac{15}{32}$

52. $\frac{11}{13}$ $\frac{5}{17}$

53. $\frac{9}{10}$ $\frac{13}{14}$

54. $\frac{7}{11}$ $\frac{8}{12}$

55. $\frac{3}{7}$ $\frac{5}{9}$

56. $\frac{5}{6}$ $\frac{16}{17}$

57. $\frac{2}{11}$ $\frac{2}{3}$

58. $\frac{1}{8}$ $\frac{5}{45}$

59. $\frac{13}{20}$ $\frac{1}{5}$

60. $\frac{7}{10}$ $\frac{6}{15}$

Name Date Period

Working with Fractions

EXAMPLE Divide to find out how many times one denominator goes into the other. Multiply the numerator by the quotient.

$\frac{2}{5} = \frac{}{25}$ Divide 25 by 5. $25 \div 5 = 5$

$\frac{2}{5} \times \frac{5}{5} = \frac{10}{25}$

$\frac{2}{5} = \frac{10}{25}$

Directions Express these fractions in higher terms.

1. $\frac{3}{5} = \frac{}{50}$	**16.** $\frac{6}{7} = \frac{}{42}$	**31.** $\frac{5}{14} = \frac{}{56}$	**46.** $\frac{5}{8} = \frac{}{96}$
2. $\frac{1}{3} = \frac{}{18}$	**17.** $\frac{7}{13} = \frac{}{39}$	**32.** $\frac{2}{23} = \frac{}{92}$	**47.** $\frac{5}{21} = \frac{}{105}$
3. $\frac{5}{6} = \frac{}{24}$	**18.** $\frac{5}{8} = \frac{}{64}$	**33.** $\frac{5}{7} = \frac{}{210}$	**48.** $\frac{5}{32} = \frac{}{160}$
4. $\frac{7}{8} = \frac{}{32}$	**19.** $\frac{2}{13} = \frac{}{52}$	**34.** $\frac{4}{13} = \frac{}{39}$	**49.** $\frac{6}{38} = \frac{}{380}$
5. $\frac{7}{8} = \frac{}{56}$	**20.** $\frac{1}{9} = \frac{}{99}$	**35.** $\frac{5}{10} = \frac{}{1{,}000}$	**50.** $\frac{35}{70} = \frac{}{280}$
6. $\frac{3}{7} = \frac{}{21}$	**21.** $\frac{11}{12} = \frac{}{60}$	**36.** $\frac{9}{17} = \frac{}{51}$	**51.** $\frac{6}{30} = \frac{}{390}$
7. $\frac{2}{9} = \frac{}{36}$	**22.** $\frac{8}{15} = \frac{}{45}$	**37.** $\frac{4}{11} = \frac{}{99}$	**52.** $\frac{3}{13} = \frac{}{65}$
8. $\frac{1}{5} = \frac{}{30}$	**23.** $\frac{6}{19} = \frac{}{76}$	**38.** $\frac{23}{30} = \frac{}{90}$	**53.** $\frac{5}{11} = \frac{}{121}$
9. $\frac{1}{4} = \frac{}{20}$	**24.** $\frac{4}{7} = \frac{}{63}$	**39.** $\frac{3}{7} = \frac{}{84}$	**54.** $\frac{45}{60} = \frac{}{480}$
10. $\frac{5}{11} = \frac{}{121}$	**25.** $\frac{13}{15} = \frac{}{105}$	**40.** $\frac{3}{16} = \frac{}{80}$	**55.** $\frac{15}{18} = \frac{}{72}$
11. $\frac{4}{9} = \frac{}{72}$	**26.** $\frac{8}{17} = \frac{}{34}$	**41.** $\frac{12}{15} = \frac{}{60}$	**56.** $\frac{8}{52} = \frac{}{156}$
12. $\frac{3}{11} = \frac{}{44}$	**27.** $\frac{10}{19} = \frac{}{38}$	**42.** $\frac{5}{6} = \frac{}{54}$	**57.** $\frac{6}{16} = \frac{}{80}$
13. $\frac{2}{3} = \frac{}{18}$	**28.** $\frac{1}{13} = \frac{}{65}$	**43.** $\frac{8}{14} = \frac{}{42}$	**58.** $\frac{7}{12} = \frac{}{156}$
14. $\frac{7}{10} = \frac{}{80}$	**29.** $\frac{10}{11} = \frac{}{55}$	**44.** $\frac{18}{23} = \frac{}{92}$	**59.** $\frac{9}{29} = \frac{}{145}$
15. $\frac{3}{4} = \frac{}{16}$	**30.** $\frac{15}{16} = \frac{}{64}$	**45.** $\frac{9}{22} = \frac{}{220}$	**60.** $\frac{5}{21} = \frac{}{126}$

Name Date Period

Renaming Fractions

EXAMPLE Rename fractions by expressing them in lowest terms.
Divide the numerator and denominator by their greatest common factor.

$$\frac{10}{14} = \frac{10 \div 2}{14 \div 2} = \frac{5}{7}$$

Directions Express these fractions and mixed numbers in their lowest terms.

1. $\frac{9}{15} =$ _____
2. $\frac{9}{27} =$ _____
3. $\frac{18}{22} =$ _____
4. $13\frac{10}{15} =$ _____
5. $2\frac{12}{14} =$ _____
6. $\frac{10}{20} =$ _____
7. $\frac{13}{39} =$ _____
8. $\frac{28}{40} =$ _____
9. $\frac{10}{50} =$ _____
10. $6\frac{5}{40} =$ _____
11. $13\frac{70}{80} =$ _____
12. $27\frac{52}{104} =$ _____
13. $\frac{30}{33} =$ _____
14. $9\frac{24}{46} =$ _____
15. $\frac{9}{21} =$ _____
16. $\frac{150}{200} =$ _____
17. $20\frac{18}{57} =$ _____
18. $\frac{46}{52} =$ _____
19. $\frac{28}{120} =$ _____
20. $\frac{102}{128} =$ _____
21. $\frac{178}{220} =$ _____
22. $8\frac{23}{92} =$ _____
23. $51\frac{66}{121} =$ _____
24. $9\frac{15}{33} =$ _____
25. $\frac{44}{108} =$ _____
26. $9\frac{31}{62} =$ _____
27. $6\frac{7}{63} =$ _____
28. $\frac{16}{64} =$ _____
29. $\frac{88}{121} =$ _____
30. $\frac{58}{64} =$ _____
31. $11\frac{62}{92} =$ _____
32. $18\frac{35}{225} =$ _____
33. $\frac{28}{54} =$ _____
34. $\frac{20}{55} =$ _____
35. $\frac{36}{38} =$ _____
36. $\frac{42}{150} =$ _____
37. $\frac{20}{25} =$ _____
38. $\frac{11}{88} =$ _____
39. $\frac{33}{39} =$ _____
40. $\frac{88}{112} =$ _____
41. $\frac{38}{56} =$ _____
42. $\frac{15}{54} =$ _____
43. $\frac{56}{108} =$ _____
44. $\frac{38}{106} =$ _____
45. $\frac{25}{155} =$ _____
46. $\frac{18}{450} =$ _____
47. $\frac{210}{280} =$ _____
48. $\frac{64}{160} =$ _____
49. $\frac{30}{72} =$ _____
50. $\frac{450}{480} =$ _____
51. $\frac{22}{42} =$ _____
52. $\frac{140}{280} =$ _____
53. $\frac{150}{300} =$ _____
54. $\frac{84}{96} =$ _____
55. $\frac{50}{68} =$ _____
56. $\frac{78}{104} =$ _____
57. $\frac{41}{205} =$ _____
58. $\frac{69}{207} =$ _____
59. $\frac{42}{122} =$ _____
60. $\frac{55}{300} =$ _____

Name Date Period

Mixed Numbers

EXAMPLE Rename $1\frac{2}{3}$ as an improper fraction $3 \times 1 = 3$ $3 + 2 = 5$ $1\frac{2}{3} = \frac{5}{3}$

Multiply the whole number by the denominator. Then, add the numerator.
Write the new numerator over the same denominator.

Directions Rename these mixed numbers as improper fractions.

1. $2\frac{1}{6} =$ _____
2. $1\frac{1}{2} =$ _____
3. $2\frac{1}{5} =$ _____
4. $1\frac{5}{6} =$ _____
5. $4\frac{1}{5} =$ _____
6. $3\frac{2}{5} =$ _____
7. $1\frac{1}{6} =$ _____
8. $9\frac{2}{7} =$ _____
9. $4\frac{3}{4} =$ _____
10. $2\frac{5}{11} =$ _____
11. $1\frac{5}{9} =$ _____
12. $13\frac{2}{7} =$ _____
13. $20\frac{1}{2} =$ _____
14. $6\frac{2}{9} =$ _____
15. $3\frac{4}{7} =$ _____

16. $2\frac{2}{3} =$ _____
17. $15\frac{1}{3} =$ _____
18. $6\frac{4}{11} =$ _____
19. $15\frac{3}{4} =$ _____
20. $6\frac{2}{5} =$ _____
21. $7\frac{1}{5} =$ _____
22. $33\frac{2}{3} =$ _____
23. $17\frac{1}{2} =$ _____
24. $2\frac{2}{17} =$ _____
25. $9\frac{5}{11} =$ _____
26. $8\frac{5}{13} =$ _____
27. $18\frac{3}{5} =$ _____
28. $3\frac{2}{19} =$ _____
29. $9\frac{10}{11} =$ _____
30. $2\frac{13}{14} =$ _____

31. $3\frac{16}{17} =$ _____
32. $4\frac{2}{19} =$ _____
33. $5\frac{7}{9} =$ _____
34. $5\frac{2}{12} =$ _____
35. $6\frac{3}{13} =$ _____
36. $4\frac{1}{13} =$ _____
37. $7\frac{10}{11} =$ _____
38. $8\frac{13}{15} =$ _____
39. $1\frac{7}{22} =$ _____
40. $3\frac{5}{11} =$ _____
41. $4\frac{5}{20} =$ _____
42. $2\frac{3}{22} =$ _____
43. $5\frac{11}{16} =$ _____
44. $21\frac{2}{61} =$ _____
45. $5\frac{13}{20} =$ _____

46. $7\frac{20}{23} =$ _____
47. $5\frac{5}{60} =$ _____
48. $1\frac{2}{13} =$ _____
49. $3\frac{5}{11} =$ _____
50. $7\frac{2}{25} =$ _____
51. $4\frac{3}{29} =$ _____
52. $4\frac{2}{32} =$ _____
53. $1\frac{7}{18} =$ _____
54. $11\frac{5}{11} =$ _____
55. $20\frac{1}{16} =$ _____
56. $10\frac{2}{17} =$ _____
57. $11\frac{5}{21} =$ _____
58. $5\frac{11}{12} =$ _____
59. $7\frac{2}{30} =$ _____
60. $2\frac{6}{23} =$ _____

Name Date Period

Renaming Improper Fractions

EXAMPLE Express the improper fractions as mixed numbers.
Divide the numerator by the denominator.
Simplify if necessary.

$\frac{78}{9}$

$$\begin{array}{r} 8 \\ 9\overline{)78} \\ -\ 72 \\ \hline 6 \end{array}$$

remainder is 6

Solution: $8\ \frac{6}{9}$ or $8\ \frac{2}{3}$

Directions Rename the improper fractions as mixed numbers.
Simplify if necessary.

1. $\frac{15}{7} =$ _____ **9.** $\frac{57}{8} =$ _____ **17.** $\frac{18}{11} =$ _____ **25.** $\frac{53}{10} =$ _____

2. $\frac{29}{6} =$ _____ **10.** $\frac{53}{23} =$ _____ **18.** $\frac{72}{18} =$ _____ **26.** $\frac{34}{12} =$ _____

3. $\frac{51}{30} =$ _____ **11.** $\frac{77}{10} =$ _____ **19.** $\frac{71}{14} =$ _____ **27.** $\frac{63}{8} =$ _____

4. $\frac{33}{8} =$ _____ **12.** $\frac{42}{13} =$ _____ **20.** $\frac{57}{13} =$ _____ **28.** $\frac{64}{9} =$ _____

5. $\frac{44}{10} =$ _____ **13.** $\frac{62}{11} =$ _____ **21.** $\frac{19}{10} =$ _____ **29.** $\frac{29}{18} =$ _____

6. $\frac{20}{10} =$ _____ **14.** $\frac{82}{11} =$ _____ **22.** $\frac{54}{20} =$ _____ **30.** $\frac{98}{9} =$ _____

7. $\frac{35}{2} =$ _____ **15.** $\frac{39}{11} =$ _____ **23.** $\frac{46}{20} =$ _____

8. $\frac{28}{8} =$ _____ **16.** $\frac{87}{33} =$ _____ **24.** $\frac{66}{11} =$ _____

Name Date Period

Improper Fractions to Mixed Numbers

EXAMPLE Rename $\frac{13}{5}$. Divide the numerator by the denominator. Simplify if necessary.

$$5\overline{)13}\ \ 2\ \ \frac{3}{5}$$
$$-\ 10$$
$$3$$

Directions Rename these improper fractions as mixed numbers. Simplify if necessary.

1. $\frac{14}{6}$ = _____	**16.** $\frac{72}{19}$ = _____	**31.** $\frac{38}{6}$ = _____	**46.** $\frac{91}{8}$ = _____
2. $\frac{16}{7}$ = _____	**17.** $\frac{60}{9}$ = _____	**32.** $\frac{17}{5}$ = _____	**47.** $\frac{76}{7}$ = _____
3. $\frac{28}{7}$ = _____	**18.** $\frac{120}{11}$ = _____	**33.** $\frac{18}{11}$ = _____	**48.** $\frac{89}{11}$ = _____
4. $\frac{15}{2}$ = _____	**19.** $\frac{36}{17}$ = _____	**34.** $\frac{23}{2}$ = _____	**49.** $\frac{48}{23}$ = _____
5. $\frac{33}{4}$ = _____	**20.** $\frac{57}{9}$ = _____	**35.** $\frac{54}{11}$ = _____	**50.** $\frac{98}{46}$ = _____
6. $\frac{18}{5}$ = _____	**21.** $\frac{39}{16}$ = _____	**36.** $\frac{92}{5}$ = _____	**51.** $\frac{88}{23}$ = _____
7. $\frac{25}{4}$ = _____	**22.** $\frac{37}{5}$ = _____	**37.** $\frac{36}{13}$ = _____	**52.** $\frac{105}{15}$ = _____
8. $\frac{62}{6}$ = _____	**23.** $\frac{17}{2}$ = _____	**38.** $\frac{39}{5}$ = _____	**53.** $\frac{28}{6}$ = _____
9. $\frac{30}{7}$ = _____	**24.** $\frac{60}{28}$ = _____	**39.** $\frac{51}{11}$ = _____	**54.** $\frac{100}{7}$ = _____
10. $\frac{35}{8}$ = _____	**25.** $\frac{33}{10}$ = _____	**40.** $\frac{46}{14}$ = _____	**55.** $\frac{49}{3}$ = _____
11. $\frac{18}{8}$ = _____	**26.** $\frac{135}{9}$ = _____	**41.** $\frac{22}{5}$ = _____	**56.** $\frac{65}{2}$ = _____
12. $\frac{30}{4}$ = _____	**27.** $\frac{200}{120}$ = _____	**42.** $\frac{87}{12}$ = _____	**57.** $\frac{85}{17}$ = _____
13. $\frac{75}{25}$ = _____	**28.** $\frac{25}{21}$ = _____	**43.** $\frac{57}{12}$ = _____	**58.** $\frac{59}{9}$ = _____
14. $\frac{72}{10}$ = _____	**29.** $\frac{63}{12}$ = _____	**44.** $\frac{62}{11}$ = _____	**59.** $\frac{99}{10}$ = _____
15. $\frac{26}{3}$ = _____	**30.** $\frac{130}{12}$ = _____	**45.** $\frac{73}{10}$ = _____	**60.** $\frac{46}{3}$ = _____

Name Date Period

Multiplication of Fractions

EXAMPLE Multiply numerators. Multiply denominators. Simplify if necessary.

$$\frac{3}{5} \times \frac{7}{8} = \frac{3 \times 7}{5 \times 8} = \frac{21}{40}$$

Directions Multiply these fractions. Simplify the answers to the lowest terms.

1. $\frac{1}{5} \times \frac{3}{4} =$ _____

2. $\frac{4}{5} \times \frac{10}{11} =$ _____

3. $\frac{6}{9} \times \frac{1}{3} =$ _____

4. $\frac{2}{5} \times \frac{4}{10} =$ _____

5. $8 \times \frac{6}{7} =$ _____

6. $\frac{7}{9} \times 1\frac{1}{2} =$ _____

7. $\frac{2}{9} \times 1\frac{1}{8} =$ _____

8. $\frac{3}{11} \times 3\frac{2}{3} =$ _____

9. $\frac{7}{13} \times \frac{13}{5} =$ _____

10. $\frac{8}{11} \times \frac{1}{5} =$ _____

11. $\frac{2}{5} \times \frac{2}{17} =$ _____

12. $\frac{5}{8} \times \frac{3}{8} =$ _____

13. $\frac{4}{6} \times \frac{2}{3} =$ _____

14. $\frac{1}{3} \times \frac{6}{10} =$ _____

15. $\frac{1}{2} \times \frac{3}{5} =$ _____

16. $\frac{35}{38} \times \frac{4}{5} =$ _____

17. $\frac{6}{11} \times 2\frac{5}{6} =$ _____

18. $\frac{7}{12} \times \frac{3}{7} =$ _____

19. $\frac{1}{6} \times \frac{2}{5} =$ _____

20. $\frac{2}{5} \times 2\frac{2}{5} =$ _____

21. $1\frac{3}{7} \times \frac{5}{8} =$ _____

22. $\frac{6}{13} \times 2\frac{1}{6} =$ _____

23. $3\frac{1}{5} \times \frac{3}{11} =$ _____

24. $4\frac{1}{5} \times 7 =$ _____

25. $5\frac{2}{5} \times 10 =$ _____

26. $5\frac{2}{13} \times \frac{1}{6} =$ _____

27. $3\frac{4}{5} \times 65 =$ _____

28. $2\frac{1}{4} \times 4 =$ _____

29. $2\frac{1}{5} \times 5\frac{1}{2} =$ _____

30. $7\frac{2}{5} \times 5\frac{2}{7} =$ _____

31. $2\frac{1}{20} \times 20\frac{5}{10} =$ _____

32. $5\frac{6}{13} \times 1\frac{1}{2} =$ _____

33. $7\frac{1}{5} \times \frac{65}{72} =$ _____

34. $5\frac{2}{7} \times 1\frac{1}{2} =$ _____

35. $7\frac{5}{8} \times 2\frac{3}{4} =$ _____

36. $5\frac{2}{12} \times 1\frac{1}{2} =$ _____

37. $5\frac{4}{11} \times 1\frac{1}{3} =$ _____

38. $3\frac{4}{5} \times 1\frac{1}{2} =$ _____

39. $8\frac{8}{9} \times \frac{18}{20} =$ _____

40. $3\frac{1}{5} \times 5\frac{1}{3} =$ _____

41. $3\frac{1}{3} \times \frac{1}{5} =$ _____

42. $2\frac{3}{7} \times \frac{14}{17} =$ _____

43. $3\frac{5}{6} \times \frac{12}{46} =$ _____

44. $5\frac{2}{7} \times 5 =$ _____

45. $7\frac{2}{5} \times 1\frac{1}{5} =$ _____

Name Date Period

Multiplying Mixed Numbers

EXAMPLE Change mixed numbers to improper fractions. Multiply. Simplify if necessary.

$$2\frac{1}{5} \times \frac{1}{5} =$$

$$\frac{11}{5} \times \frac{1}{5} = \frac{11}{25}$$

Directions Multiply these fractions.

1. $4\frac{2}{5} \times 1\frac{3}{5} =$ _____

2. $1\frac{1}{6} \times 1\frac{2}{7} =$ _____

3. $3\frac{1}{3} \times 1\frac{3}{5} =$ _____

4. $\frac{3}{7} \times 1\frac{1}{5} =$ _____

5. $\frac{1}{7} \times 2\frac{1}{4} =$ _____

6. $1\frac{1}{13} \times 2\frac{3}{7} =$ _____

7. $2\frac{1}{4} \times 2\frac{1}{3} =$ _____

8. $1\frac{1}{3} \times 3\frac{1}{2} =$ _____

9. $2\frac{2}{3} \times \frac{1}{6} =$ _____

10. $1\frac{1}{3} \times 2\frac{2}{5} =$ _____

11. $\frac{1}{5} \times 2\frac{1}{3} =$ _____

12. $2\frac{5}{6} \times 1\frac{5}{7} =$ _____

13. $2\frac{1}{3} \times 3\frac{1}{5} =$ _____

14. $2\frac{2}{3} \times 3\frac{1}{3} =$ _____

15. $\frac{3}{5} \times 3\frac{1}{3} =$ _____

Name Date Period

Dividing Fractions

EXAMPLE Invert the divisor. Multiply. Simplify if necessary.

$$\frac{2}{5} \div \frac{3}{7} =$$

$$\frac{2}{5} \times \frac{7}{3} = \frac{14}{15}$$

Directions Divide these fractions. Remember to invert the divisor. Show your work. See the example.

1. $\frac{3}{10} \div \frac{4}{5} =$

2. $\frac{13}{12} \div \frac{15}{18} =$

3. $\frac{5}{9} \div \frac{8}{12} =$

4. $\frac{7}{5} \div \frac{10}{15} =$

5. $\frac{4}{12} \div \frac{6}{8} =$

6. $\frac{8}{9} \div \frac{6}{7} =$

7. $\frac{5}{12} \div \frac{7}{8} =$

8. $\frac{7}{10} \div \frac{10}{15} =$

9. $\frac{2}{7} \div \frac{7}{8} =$

10. $\frac{1}{7} \div \frac{3}{14} =$

11. $\frac{9}{14} \div \frac{18}{21} =$

12. $\frac{12}{14} \div \frac{6}{7} =$

13. $\frac{8}{9} \div \frac{6}{9} =$

14. $\frac{6}{7} \div \frac{2}{9} =$

15. $\frac{4}{5} \div \frac{16}{20} =$

16. $\frac{1}{6} \div \frac{5}{12} =$

17. $\frac{1}{5} \div \frac{3}{5} =$

18. $\frac{14}{15} \div \frac{14}{15} =$

19. $\frac{3}{7} \div \frac{9}{10} =$

20. $\frac{14}{16} \div \frac{15}{20} =$

Name Date Period

Division of Fractions

EXAMPLE Invert the divisor. Multiply and simplify if necessary.

$$\frac{3}{5} \div \frac{2}{5} = \frac{3}{5} \times \frac{5}{2}$$

$$= \frac{3}{\cancel{5}_{1}} \times \frac{\cancel{5}^{1}}{2}$$

$$= \frac{3 \times 1}{1 \times 2}$$

$$= \frac{3}{2} = 1\frac{1}{2}$$

Directions Divide these fractions. Simplify the answers to the lowest terms.

1. $\frac{3}{7} \div \frac{1}{7} =$ _____

2. $\frac{6}{7} \div \frac{2}{9} =$ _____

3. $\frac{5}{13} \div \frac{25}{26} =$ _____

4. $\frac{15}{16} \div \frac{3}{8} =$ _____

5. $\frac{6}{13} \div \frac{2}{13} =$ _____

6. $\frac{3}{10} \div 1\frac{4}{5} =$ _____

7. $\frac{6}{11} \div 2\frac{1}{5} =$ _____

8. $\frac{4}{5} \div \frac{24}{25} =$ _____

9. $\frac{5}{7} \div \frac{14}{15} =$ _____

10. $\frac{1}{2} \div \frac{1}{3} =$ _____

11. $\frac{5}{2} \div 1\frac{1}{2} =$ _____

12. $\frac{4}{3} \div 2\frac{1}{5} =$ _____

13. $\frac{1}{5} \div \frac{3}{4} =$ _____

14. $\frac{9}{10} \div \frac{2}{5} =$ _____

15. $\frac{2}{5} \div \frac{1}{8} =$ _____

16. $5\frac{2}{8} \div \frac{1}{8} =$ _____

17. $\frac{12}{17} \div \frac{15}{21} =$ _____

18. $\frac{1}{3} \div 2\frac{1}{2} =$ _____

19. $2\frac{3}{4} \div \frac{11}{16} =$ _____

20. $5\frac{3}{5} \div 2\frac{1}{10} =$ _____

21. $2\frac{1}{5} \div \frac{1}{5} =$ _____

22. $3\frac{2}{7} \div \frac{46}{21} =$ _____

23. $1\frac{2}{5} \div 2\frac{2}{3} =$ _____

24. $1\frac{2}{8} \div 2\frac{1}{2} =$ _____

25. $\frac{5}{16} \div 1\frac{1}{2} =$ _____

26. $7\frac{1}{2} \div 22\frac{1}{2} =$ _____

27. $5\frac{2}{3} \div 1\frac{5}{12} =$ _____

28. $\frac{3}{7} \div 1\frac{3}{11} =$ _____

29. $2\frac{1}{6} \div 1\frac{1}{2} =$ _____

30. $3\frac{5}{13} \div \frac{22}{39} =$ _____

31. $5 \div 1\frac{1}{6} =$ _____

32. $11 \div 3\frac{4}{33} =$ _____

33. $4\frac{3}{11} \div 6 =$ _____

34. $4\frac{1}{2} \div \frac{36}{38} =$ _____

35. $3\frac{2}{7} \div 1\frac{1}{2} =$ _____

36. $2\frac{5}{6} \div 17 =$ _____

37. $1\frac{5}{9} \div 1\frac{2}{5} =$ _____

38. $2\frac{3}{5} \div \frac{1}{5} =$ _____

39. $5\frac{3}{8} \div 1\frac{1}{16} =$ _____

40. $1\frac{3}{11} \div 5 =$ _____

Name Date Period

Addition of Fractions with Like Denominators

EXAMPLE Add numerators. Keep the denominator.

$$\begin{array}{r} \frac{5}{12} \\ +\ \frac{6}{12} \\ \hline \frac{11}{12} \end{array}$$

Directions Add these fractions. Simplify the answers.

1. $\frac{2}{7} + \frac{4}{7}$ =

2. $\frac{3}{16} + \frac{2}{16}$ =

3. $\frac{5}{15} + \frac{3}{15}$ =

4. $\frac{7}{21} + \frac{7}{21}$ =

5. $\frac{8}{9} + \frac{5}{9}$ =

6. $5\frac{2}{3} + 2\frac{1}{3}$ =

7. $\frac{2}{9} + \frac{3}{9}$ =

8. $\frac{2}{17} + \frac{5}{17}$ =

9. $\frac{3}{20} + \frac{2}{20}$ =

10. $2\frac{2}{18} + 3\frac{3}{18}$ =

11. $6\frac{7}{10} + \frac{9}{10}$ =

12. $12\frac{7}{11} + 3\frac{2}{11}$ =

13. $\frac{5}{13} + \frac{8}{13}$ =

14. $\frac{7}{18} + \frac{2}{18}$ =

15. $\frac{6}{20} + \frac{5}{20}$ =

16. $4\frac{6}{23} + 5\frac{17}{23}$ =

17. $5\frac{5}{26} + \frac{24}{26}$ =

18. $35\frac{5}{6} + 5$ =

19. $4 + 6\frac{2}{5}$ =

20. $7\frac{2}{13} + \frac{11}{13}$ =

Name Date Period

Addition of Fractions with Unlike Denominators

EXAMPLE To add fractions and mixed numbers with unlike denominators, find the least common multiple of the denominators. Raise the fraction to higher terms and add.

$$\begin{array}{rcl} \frac{5}{6} & = & \frac{15}{18} \\ +\ \frac{2}{18} & = & +\ \frac{2}{18} \\ \hline & = & \frac{17}{18} \end{array}$$

Directions Add these fractions. Simplify the answers.

1. $\frac{4}{9} + \frac{1}{3}$

2. $\frac{7}{18} + \frac{1}{3}$

3. $5\frac{3}{7} + 2\frac{1}{14}$

4. $10\frac{2}{7} + 3\frac{5}{34}$

5. $25\frac{6}{35} + 4\frac{3}{70}$

6. $\frac{5}{9} + \frac{4}{18}$

7. $\frac{4}{21} + \frac{1}{7}$

8. $6\frac{3}{20} + 4\frac{2}{5}$

9. $23\frac{1}{7} + 2\frac{5}{14}$

10. $38\frac{1}{12} + 2\frac{4}{60}$

11. $\frac{6}{25} + \frac{4}{5}$

12. $\frac{8}{35} + \frac{2}{7}$

13. $8\frac{3}{20} + \frac{3}{4}$

14. $37\frac{4}{8} + 5\frac{7}{24}$

15. $3\frac{3}{5} + 2\frac{1}{20}$

16. $\frac{12}{35} + 7\frac{7}{210}$

17. $18\frac{1}{6} + 3\frac{1}{72}$

18. $8\frac{3}{21} + 2\frac{1}{7}$

19. $8\frac{1}{5} + 10\frac{1}{55}$

20. $12\frac{5}{28} + 4\frac{5}{56}$

Name Date Period

More Addition of Fractions

EXAMPLE To add fractions and mixed numbers with unlike denominators, find the least common multiple of the denominators. Raise the fraction to higher terms and add.

$$\begin{array}{rcl} \frac{5}{9} & = & \frac{35}{63} \\ +\ \frac{3}{7} & = & +\ \frac{27}{63} \\ \hline & = & \frac{62}{63} \end{array}$$

Directions Add these fractions. Simplify the answers.

1. $\frac{11}{20} + \frac{4}{7}$

2. $\frac{5}{11} + \frac{4}{7}$

3. $2\frac{5}{7} + 5\frac{6}{8}$

4. $5\frac{4}{9} + 3\frac{2}{11}$

5. $16\frac{5}{12} + 4\frac{3}{5}$

6. $\frac{3}{13} + \frac{1}{5}$

7. $\frac{3}{7} + \frac{9}{9}$

8. $\frac{5}{12} + 6\frac{4}{10}$

9. $6\frac{3}{13} + 4\frac{5}{6}$

10. $9\frac{5}{11} + 6\frac{2}{5}$

11. $\frac{6}{22} + \frac{4}{5}$

12. $\frac{7}{11} + \frac{10}{12}$

13. $2\frac{7}{13} + 9\frac{3}{10}$

14. $3\frac{5}{7} + 2\frac{9}{11}$

15. $4\frac{7}{13} + 2\frac{3}{5}$

16. $3\frac{4}{7} + 7\frac{3}{8}$

17. $28\frac{5}{7} + 6\frac{4}{9}$

18. $4\frac{1}{12} + 6\frac{2}{7}$

19. $35\frac{4}{19} + 2\frac{3}{10}$

20. $12\frac{8}{15} + \frac{1}{4}$

Name Date Period

Addition of Mixed Numbers

EXAMPLE Add the fractions. Find the lowest common multiple if necessary. Add the whole numbers. Simplify to lowest terms.

$$\begin{array}{r} 3\frac{2}{13} \\ +\ 4\frac{1}{13} \\ \hline 7\frac{3}{13} \end{array}$$

Directions Add these fractions. Simplify the answers to the lowest terms.

1. $2\frac{3}{10} + 3\frac{1}{10}$

2. $18\frac{5}{16} + 3\frac{1}{8}$

3. $81\frac{2}{15} + 2\frac{2}{3}$

4. $18\frac{2}{11} + 4\frac{5}{6}$

5. $23\frac{4}{7} + 8$

6. $4\frac{2}{5} + 3\frac{1}{5}$

7. $7\frac{1}{4} + \frac{1}{3}$

8. $17 + 2\frac{1}{5}$

9. $29\frac{2}{5} + 3\frac{5}{6}$

10. $16\frac{3}{13} + \frac{4}{39}$

11. $6\frac{5}{21} + 2\frac{1}{7}$

12. $13\frac{5}{16} + 2\frac{1}{4}$

13. $10\frac{3}{7} + 2\frac{4}{5}$

14. $13\frac{3}{22} + 5\frac{3}{44}$

Directions Rewrite the fractions in the standard form and add. Simplify the answers to the lowest terms.

15. $1\frac{1}{2} + 2\frac{3}{11} =$ _____

16. $2\frac{3}{5} + 4\frac{1}{6} =$ _____

17. $7\frac{1}{7} + 5\frac{1}{8} =$ _____

18. $6\frac{2}{9} + 1\frac{3}{10} =$ _____

19. $10 + 2\frac{1}{6} =$ _____

20. $5\frac{2}{12} + \frac{1}{10} =$ _____

Name Date Period

Subtraction of Fractions with Like Denominators

EXAMPLE Subtract numerators. Keep denominators. Simplify if necessary.

$$\begin{array}{r} \frac{7}{8} \\ -\ \frac{3}{8} \\ \hline \frac{4}{8} \end{array} = \frac{1}{2}$$

Directions Subtract these fractions and simplify your answers.

1. $\frac{18}{35} - \frac{9}{35}$

2. $3\frac{7}{12} - 2\frac{2}{12}$

3. $8\frac{13}{15} - 3\frac{4}{15}$

4. $16\frac{11}{20} - \frac{6}{20}$

5. $7\frac{2}{33} - 5$

6. $\frac{13}{16} - \frac{5}{16}$

7. $5\frac{15}{18} - 2\frac{3}{18}$

8. $11\frac{12}{41} - 5\frac{6}{41}$

9. $8\frac{5}{28} - 5$

10. $13\frac{17}{18} - 4\frac{8}{18}$

11. $\frac{10}{21} - \frac{7}{21}$

12. $11\frac{4}{10} - \frac{1}{10}$

13. $30\frac{18}{33} - 5\frac{7}{33}$

14. $31\frac{14}{27} - 4\frac{5}{27}$

15. $15\frac{3}{16} - 4\frac{1}{16}$

16. $13\frac{4}{29} - 3\frac{2}{29}$

17. $8\frac{33}{56} - 2\frac{5}{56}$

18. $33\frac{37}{45} - \frac{2}{45}$

19. $13\frac{17}{38} - \frac{7}{38}$

20. $25\frac{7}{33} - 4\frac{4}{33}$

Name Date Period

Subtraction of Fractions Without Renaming

EXAMPLE Raise fractions to higher terms. Subtract numerators and whole numbers. Simplify if necessary.

$$\begin{array}{rcl} 15\frac{2}{3} & = & 15\frac{14}{21} \\ -\ 6\frac{2}{7} & = & -\ 6\frac{6}{21} \\ \hline & = & 9\frac{8}{21} \end{array}$$

Directions Subtract these fractions. Simplify the answers to the lowest terms.

1. $25\frac{1}{8} - 24\frac{1}{9}$

2. $28\frac{12}{15} - 4\frac{2}{5}$

3. $52\frac{3}{10} - 2\frac{5}{17}$

4. $3\frac{15}{21} - 1\frac{1}{5}$

5. $51\frac{5}{9} - 4\frac{4}{10}$

6. $22\frac{7}{8} - 3\frac{1}{24}$

7. $26\frac{4}{9} - 4\frac{1}{8}$

8. $14\frac{5}{11} - 7\frac{2}{7}$

9. $7\frac{2}{18} - 5\frac{1}{20}$

10. $28\frac{4}{21} - 4\frac{1}{7}$

11. $25\frac{12}{38} - 9\frac{3}{19}$

12. $33\frac{4}{7} - 6\frac{1}{7}$

13. $4\frac{11}{16} - 2\frac{3}{32}$

14. $16\frac{7}{28} - 5\frac{3}{28}$

15. $16\frac{3}{10} - 2\frac{1}{5}$

16. $8\frac{1}{2} - 5\frac{3}{9}$

17. $42\frac{6}{7} - 5\frac{1}{6}$

18. $2\frac{1}{3} - 1\frac{2}{15}$

19. $5\frac{1}{13} - 2\frac{1}{15}$

20. $14\frac{2}{15} - \frac{1}{16}$

Name Date Period

Subtraction of Fractions with Renaming

EXAMPLE Rename the fractions and subtract them. Subtract the whole numbers. Simplify if necessary.

$$\begin{array}{rcr} 19\frac{1}{5} & = & 18\frac{6}{5} \\ -\ 2\frac{3}{5} & = & -\ 2\frac{3}{5} \\ \hline & & 16\frac{3}{5} \end{array}$$

Directions Subtract these fractions. Simplify the answers to the lowest terms.

1. $13\frac{1}{8} - 1\frac{7}{8}$

2. $28\frac{1}{3} - 5\frac{2}{3}$

3. $13\frac{2}{19} - 2\frac{5}{19}$

4. $14\frac{2}{17} - 5\frac{3}{17}$

5. $26\frac{5}{28} - 4\frac{6}{28}$

6. $28\frac{2}{7} - 5\frac{5}{7}$

7. $4\frac{3}{9} - \frac{5}{9}$

8. $6\frac{4}{11} - 1\frac{6}{11}$

9. $29\frac{5}{17} - 28\frac{9}{17}$

10. $42\frac{16}{50} - 2\frac{25}{50}$

11. $12\frac{2}{17} - 3\frac{5}{17}$

12. $6 - \frac{3}{12}$

13. $8\frac{3}{21} - 5\frac{7}{21}$

14. $32\frac{13}{35} - 5\frac{15}{35}$

15. $32 - 4\frac{5}{22}$

16. $7 - 5\frac{11}{12}$

17. $67 - 5\frac{17}{18}$

18. $8\frac{7}{20} - 5\frac{11}{20}$

19. $5 - 2\frac{17}{20}$

20. $9\frac{11}{20} - 5\frac{12}{20}$

Name Date Period

More Subtraction of Fractions with Renaming

EXAMPLE Rename the fractions and subtract them. Subtract the whole numbers. Simplify if necessary.

$$\begin{array}{rcrcr} 3\frac{2}{5} & = & 3\frac{16}{40} & = & 2\frac{56}{40} \\ -\ 2\frac{7}{8} & = & -\ 2\frac{35}{40} & = & -\ 2\frac{35}{40} \\ \hline & & & & \frac{21}{40} \end{array}$$

Directions Subtract these fractions. Simplify the answers.

1. $4\frac{3}{4} - 3\frac{5}{6}$

2. $14\frac{2}{9} - 5\frac{7}{8}$

3. $11\frac{1}{5} - \frac{1}{4}$

4. $38\frac{2}{11} - 4\frac{5}{22}$

5. $45\frac{9}{11} - 4\frac{21}{22}$

6. $6\frac{4}{13} - 5\frac{25}{26}$

7. $16\frac{9}{13} - 4\frac{18}{26}$

8. $29\frac{1}{15} - 2\frac{3}{4}$

9. $12 - 2\frac{10}{11}$

10. $11\frac{1}{16} - \frac{1}{2}$

11. $4 - 2\frac{3}{5}$

12. $3\frac{1}{2} - 2\frac{6}{7}$

13. $18\frac{2}{15} - 5\frac{3}{4}$

14. $13\frac{3}{16} - 4\frac{7}{8}$

15. $23\frac{4}{7} - 22\frac{9}{14}$

16. $9\frac{1}{3} - 4\frac{11}{13}$

17. $12\frac{14}{15} - 10\frac{29}{30}$

18. $10\frac{2}{5} - 5\frac{10}{11}$

19. $10\frac{2}{7} - 8\frac{11}{14}$

20. $4\frac{5}{16} - 2\frac{3}{8}$

Name Date Period

Subtraction of Fractions

EXAMPLE Change to common denominators if necessary. Rename top mixed number if necessary. Subtract numerators. Simplify if necessary.

$$\begin{array}{rcrcr} 1\frac{7}{18} & = & 1\frac{7}{18} & = & \frac{25}{18} \\ -\frac{5}{9} & = & -\frac{10}{18} & = & -\frac{10}{18} \\ \hline & & & & \frac{15}{18} \end{array} = \frac{5}{6}$$

Directions Subtract these fractions. Simplify the answers to the lowest terms.

1. $\frac{7}{18} - \frac{3}{18}$

2. $16\frac{12}{13} - 3\frac{1}{26}$

3. $33\frac{1}{5} - 2\frac{3}{4}$

4. $23\frac{7}{18} - \frac{3}{72}$

5. $2\frac{5}{13} - \frac{4}{13}$

6. $4\frac{15}{16} - 2\frac{3}{8}$

7. $18 - 5\frac{2}{7}$

8. $5\frac{1}{10} - 2\frac{7}{15}$

9. $16\frac{2}{7} - 2\frac{3}{7}$

10. $10\frac{13}{24} - 2\frac{1}{6}$

11. $13 - 2\frac{3}{11}$

12. $12 - 6\frac{3}{13}$

13. $16\frac{3}{10} - 1\frac{5}{10}$

14. $7\frac{5}{11} - 3$

15. $59\frac{1}{15} - 2\frac{3}{45}$

16. $12\frac{3}{16} - 5\frac{11}{48}$

Directions Rewrite the fractions in the standard form and subtract. Simplify the answers to the lowest terms.

17. $3\frac{1}{4} - 2\frac{7}{8} =$ _____

18. $13\frac{2}{15} - 3\frac{4}{5} =$ _____

19. $6\frac{5}{12} - 4\frac{1}{5} =$ _____

20. $38 - 2\frac{3}{7} =$ _____

Name Date Period

Basic Operations with Fractions and Mixed Numbers

	Add.	Subtract.	Multiply.	Divide.
EXAMPLES	$\frac{3}{4} + \frac{3}{4} = \frac{6}{4} = 1\frac{1}{2}$	$1\frac{5}{8} - 1\frac{3}{8} = \frac{2}{8} = \frac{1}{4}$	$\frac{\cancel{2}^{1}}{\cancel{3}_{1}} \times \frac{\cancel{3}^{1}}{\cancel{10}_{5}} = \frac{1}{5}$	$\frac{1}{4} \div \frac{7}{8} = \frac{1}{\cancel{4}_{1}} \times \frac{\cancel{8}^{2}}{7} = \frac{2}{7}$

Directions Add.

1. $2\frac{1}{3} + 3\frac{1}{3} =$ _____

2. $4\frac{1}{8} + 2\frac{2}{8} =$ _____

3. $1\frac{1}{5} + \frac{1}{10} =$ _____

4. $2\frac{1}{6} + 3\frac{2}{3} =$ _____

5. $4\frac{1}{7} + 1\frac{3}{14} =$ _____

6. $1\frac{1}{8} + 2\frac{1}{6} =$ _____

Directions Subtract.

7. $5\frac{2}{8} - 1\frac{1}{4} =$ _____

8. $2\frac{2}{3} - 1\frac{1}{2} =$ _____

9. $4\frac{7}{8} - 1\frac{3}{4} =$ _____

10. $6\frac{2}{8} - 2\frac{3}{4} =$ _____

11. $35 - 6\frac{2}{7} =$ _____

12. $41\frac{3}{5} - 6 =$ _____

Directions Multiply.

13. $\frac{5}{6} \times \frac{2}{3} =$ _____

14. $\frac{4}{11} \times \frac{22}{10} =$ _____

15. $\frac{1}{2} \times \frac{2}{3} =$ _____

16. $2\frac{3}{5} \times 1\frac{1}{3} =$ _____

17. $6\frac{2}{9} \times \frac{1}{2} =$ _____

18. $1\frac{1}{8} \times 2\frac{3}{5} =$ _____

Directions Divide.

19. $\frac{6}{8} \div \frac{18}{24} =$ _____

20. $\frac{5}{6} \div \frac{25}{30} =$ _____

21. $\frac{4}{11} \div \frac{18}{20} =$ _____

22. $1\frac{1}{2} \div \frac{3}{6} =$ _____

23. $2\frac{1}{4} \div \frac{9}{10} =$ _____

24. $2\frac{3}{5} \div \frac{26}{30} =$ _____

25. $1\frac{2}{9} \div 1\frac{1}{2} =$ _____

Name Date Period

Place Value

EXAMPLE Look at the underlined digit. Write the place value for the underlined digit.

3.7<u>5</u>4 hundredths

Directions Write the place value for each underlined digit.

1. 2.3<u>4</u> _____

2. 1.2<u>0</u>345 _____

3. 1.023<u>0</u>1 _____

4. 12.<u>0</u>1012 _____

5. 0.000<u>1</u>2 _____

6. 12.00200 _____

7. 1.2<u>2</u>008 _____

8. 840.<u>8</u>8940 _____

9. 2.10769 _____

10. 502.00<u>1</u> _____

11. 3.400<u>1</u> _____

12. 7.<u>3</u>309 _____

13. 1.00<u>2</u>3 _____

14. 0.002<u>0</u>03 _____

15. 3.0041<u>0</u> _____

16. 23.0001<u>9</u> _____

Directions Underline the place value indicated.

17. 12.0002 ten-thousandths

18. 0.012 tenths

19. 0.00023 hundred-thousandths

20. 0.00012 thousandths

21. 1.02304 tenths

22. 102.0023 tenths

23. 3.04958 ten-thousandths

24. 0.010102 millionths

25. 2.09077 hundred-thousandths

26. 10.10230 hundred-thousandths

27. 530.0002 tenths

28. 2.93001 ten-thousandths

29. 0.0112887 millionths

30. 1.0234 tenths

Name Date Period

Reading and Writing Numerals

EXAMPLES Look at the underlined digit. Write the name of the place.

3.14<u>3</u> thousandths

Start at the left. Write the word for the numerals.
Use *and* to stand for the decimal point.

1.63 one and sixty-three hundredths

Directions Write the name of the place for each underlined digit.

1. 12.<u>1</u>8		**9.** 8.0<u>2</u>63		**17.** 3.<u>0</u>4	
2. 0.9<u>2</u>0		**10.** 4.<u>0</u>005		**18.** 0.00<u>3</u>705	
3. 1.03<u>4</u>		**11.** 4.590<u>2</u>1		**19.** 0.003<u>0</u>4	
4. 3.05<u>7</u>8		**12.** 295.<u>1</u>1		**20.** 59.0<u>4</u>92	
5. 64.23<u>8</u>1		**13.** 5.02<u>8</u>48		**21.** 83.3<u>9</u>051	
6. 0.0<u>0</u>3		**14.** 45.9221<u>0</u>		**22.** 19.4603<u>1</u>	
7. 152.<u>9</u>		**15.** 394.0<u>2</u>64		**23.** 44.<u>9</u>12	
8. 24.0223<u>1</u>		**16.** 385.0448<u>5</u>		**24.** 5.6105<u>6</u>	

Directions Write the following numerals in words.

25. 9.032 _____

_____

26. 0.0024 _____

_____

27. 102.10245 _____

_____

28. 0.010139 _____

_____

29. 40.044 _____

_____

30. 410.00003 _____

_____

Name Date Period

Translation of Decimal Numbers

EXAMPLE Read the amount. Write it in numerals. Remember, *and* stands for the decimal point.

Five and seventy-one hundredths 5.71

Directions Write the following amounts in numerals.

1. Twenty-three and six tenths _____

2. Forty-one and three hundredths _____

3. Seventy-two thousandths _____

4. Five and eight tenths _____

5. Six and three thousandths _____

6. One hundred two thousandths _____

7. Four hundred three thousandths _____

8. Two and two hundredths _____

9. Six hundred thirty-four ten-thousandths _____

10. Six thousand, three hundred forty-eight hundred-thousandths _____

11. Twenty thousand, four hundred five hundred-thousandths _____

12. One hundred two and seven hundredths _____

13. Eight hundred two and seven hundred fifty-one thousandths _____

14. One thousand, nine hundred three and seven hundredths _____

15. Two thousand and twenty-six thousandths _____

16. Four thousand three and seven ten-thousandths _____

17. Two hundred six thousandths _____

18. Three hundred-thousandths _____

19. Thirty-four hundred-thousandths _____

20. One and fifty-nine hundredths _____

Name Date Period

Comparing and Rounding Decimals

EXAMPLE Order numbers from least to greatest.

1.059 0.0159 0.159

Least → Greatest

0.0159 0.159 1.059

Directions Arrange each set in order from least to greatest.

1.	0.6234	62.350	0.7406	_____	_____	_____
2.	0.0045	0.0450	0.0040	_____	_____	_____
3.	2.0049	2.0050	2.034	_____	_____	_____
4.	0.1024	0.1031	0.113	_____	_____	_____
5.	23.0045	23.004	2.30045	_____	_____	_____
6.	304.097	300.999	304.102	_____	_____	_____
7.	3.00495	30.0495	0.300495	_____	_____	_____
8.	9.00603	9.00599	9.000999	_____	_____	_____
9.	0.356924	0.350899	0.400001	_____	_____	_____
10.	5.04592	6.001	0.939401	_____	_____	_____

EXAMPLE Round to the nearest hundredth. Round up if thousandth is 5 or greater.

5.136

5.14

Directions Round the following numbers to the nearest:

	Tenth		Hundredth		Thousandth
11. 245.44	_____	**19.** 0.0394	_____	**28.** 0.08931	_____
12. 4.091	_____	**20.** 199.051	_____	**29.** 0.00592	_____
13. 2.0399	_____	**21.** 6.34499	_____	**30.** 10.122309	_____
14. 0.048	_____	**22.** 0.995	_____	**31.** 0.39	_____
15. 30.9199	_____	**23.** 666.034	_____	**32.** 390.0485	_____
16. 0.048539	_____	**24.** 394.091999	_____	**33.** 3,998.0002	_____
17. 5.0555	_____	**25.** 0.0951	_____	**34.** 8.89099	_____
18. 49.952	_____	**26.** 495.0495	_____	**35.** 4.76842	_____
		27. 40.0495	_____		

Name Date Period

Addition of Decimals

EXAMPLE Write the problem in vertical form. Then add.

$2.3 + 4 + 0.09 + 59 =$

2.3	2.30
4.	4.00
0.09	0.09
+ 59.	+ 59.00
65.39	65.39

Directions Rewrite the following addends in vertical form and add.

1. $3.4 + 5 + 0.18 + 17 =$ _____

2. $0.056 + 3.02 + 4 + 1.2 =$ _____

3. $19 + 9.3 + 0.049 + 3 =$ _____

4. $30.9 + 5 + 0.91 + 0.922 =$ _____

5. $0.08 + 1 + 1.1 + 6.2 =$ _____

6. $2.331 + 0.1123 + 7 + 1.8 =$ _____

7. $16 + 4.05 + 5 + 4.77 =$ _____

8. $65.94 + 4.7 + 1 + 7.2 =$ _____

9. $5.906 + 0.071 + 44.581 =$ _____

10. $3.045 + 0.045 + 84.3 =$ _____

11. $0.9639 + 0.0082 + 5.03 =$ _____

12. $7.304 + 1.5 + 8.33 + 2 =$ _____

13. $7004.1 + 35.066 + 0.06 =$ _____

14. $93 + 0.739 + 2.38 + 0.1 =$ _____

15. $4.4 + 3.5 + 23.49 + 6 =$ _____

16. $6.06 + 33 + 0.045 + 3 =$ _____

17. $5 + 6 + 6.9 + 0.082 =$ _____

18. $6.112 + 4.7 + 6 + 0.0001 =$ _____

19. $9.9 + 5.03 + 5.5 + 0.002 =$ _____

20. $47.05 + 6.2 + 0.4 + 1 =$ _____

21. $54 + 2.2 + 0.01 + 6.9 =$ _____

22. $2.334 + 0.1128 + 8.3 =$ _____

23. $4.056 + 3.5 + 7 + 0.92 =$ _____

24. $5 + 6.1 + 55.6 + 0.01 =$ _____

25. $6.001 + 4.9 + 3 + 0.05 =$ _____

26. $1 + 2.1 + 5.66 + 0.031 =$ _____

27. $9.9 + 3.4 + 0.56 + 0.012 =$ _____

28. $6.035 + 3.4 + 5 + 0.057 =$ _____

Directions Solve the following word problems with addition.

29. Compute the total amount deposited if Lance's deposits are \$15, \$1.90, \$121, and \$2.65. _____

30. It rains three times during the first week of summer vacation. Compute the total amount if it rains 2.05 inches, 0.29 inches, and 3 inches. _____

Name Date Period

Subtraction of Decimals

EXAMPLE Write the problem in vertical form. Then subtract.

$1.03 - 0.94 =$

$$\begin{array}{r} {\scriptstyle 0\ 9\ 13} \\ 1.\not{0}\not{3} \\ -\ 0.94 \\ \hline 0.09 \end{array}$$

Directions Rewrite these problems in vertical form. Then subtract.

1. $6.34 - 0.14 =$ _____

2. From 23.034 subtract 0.0341 _____

3. $20 - 0.934 =$ _____

4. Subtract 12.92 from 27.104 _____

5. $103.506 - 94 =$ _____

6. Subtract 0.607 from 2 _____

7. $2.3941 - 0.2852 =$ _____

8. From 1.0182 subtract 0.81818 _____

9. $34.8 - 5.0837 =$ _____

10. From 2 subtract 1.9283 _____

11. $0.0238 - 0.003856 =$ _____

12. Subtract 9.9 from 10.005 _____

13. $1.3 - 1.0953 =$ _____

14. Subtract 0.0056 from 0.9 _____

15. $58.3 - 12.923 =$ _____

16. From 4.95 subtract 2.5 _____

17. $71 - 5.341 =$ _____

18. Subtract 0.3945 from 6 _____

19. $0.304 - 0.0433 =$ _____

20. From 205.5 subtract 0.56 _____

21. $4.59 - 2.4 =$ _____

22. Subtract 2.3 from 5 _____

23. $4.5 - 0.0954 =$ _____

24. From 6.94 subtract 0.9567 _____

25. $49 - 5.607 =$ _____

26. Subtract 0.0384 from 1.991 _____

27. $3 - 0.4581 =$ _____

28. From 86 subtract 0.86 _____

Directions Solve the following word problems with subtraction.

29. Diana saves $25 for school clothes and purchases a blouse costing $9.96. How much money does she have left? _____

30. Ross drives 298.6 miles on a two-day vacation. If he drives 150 miles on the first day, how many miles does he drive on the second day? _____

Name Date Period

Multiplication of Decimals by Powers of Ten

EXAMPLE Write the problem in vertical form. Then multiply. Remember the decimal point.

2.63 × 10 =

$$\begin{array}{r} 2.63 \\ \times\ 10 \\ \hline 26.30 \end{array}$$

Directions Rewrite the following problems in vertical form and multiply.

1. 6.25 × 10 = _____
2. 5.638 × 10 = _____
3. 0.06 × 100 = _____
4. 0.072 × 100 = _____
5. 1.061 × 10 = _____
6. 5.63 × 100 = _____
7. 3.14 × 100 = _____
8. 1.414 × 1,000 = _____
9. 0.00627 × 1,000 = _____
10. 0.2802 × 10 = _____
11. 0.0605 × 100 = _____
12. 0.7701 × 100 = _____
13. 1.101 × 1,000 = _____
14. 7.6 × 100 = _____
15. 5.1 × 1,000 = _____
16. 8.81 × 10,000 = _____
17. 3.7 × 10,000 = _____
18. 2.05 × 10,000 = _____
19. 0.0001 × 1,000 = _____
20. 5.6 × 100 = _____
21. 69.1 × 1,000 = _____
22. 0.777 × 1,000 = _____
23. 0.201 × 10,000 = _____
24. 0.028 × 10 = _____
25. 0.002 × 1,000 = _____
26. 1.1 × 1,000 = _____
27. 10 × 1.67 = _____
28. 1,000 × 0.003 = _____
29. 100 × 0.1505 = _____
30. 10 × 1.688 = _____
31. 1,000 × 3.9 = _____
32. 100 × 3.702 = _____
33. 10 × 0.1 = _____
34. 1,000 × 0.11 = _____
35. 3.44 × 100 = _____
36. 1.112 × 1,000 = _____
37. 0.00232 × 10,000 = _____
38. 0.012 × 10,000 = _____
39. 3.033 × 10 = _____
40. 8.014 × 1,000 = _____
41. 0.0556 × 10,000 = _____
42. 5.5 × 100 = _____
43. 0.6709 × 100 = _____
44. 0.0021 × 1,000 = _____
45. 23.1 × 100 = _____

Name Date Period

Multiplication of Decimals

EXAMPLE Write the problem in vertical form. Then multiply. Remember the decimal point.

$1.2 \times 0.04 =$

$$\begin{array}{r} 1.2 \\ \times\ .04 \\ \hline 48 \\ 00 \\ \hline 0.048 \end{array}$$

Directions Rewrite the following problems in vertical form and multiply.

1. $3.5 \times 0.11 =$ _____

2. $48 \times 1.5 =$ _____

3. $4.05 \times 0.03 =$ _____

4. $3.6 \times 0.93 =$ _____

5. $56.7 \times 0.31 =$ _____

6. $0.059 \times 0.12 =$ _____

7. $9.01 \times 1.03 =$ _____

8. $5.8 \times 0.0004 =$ _____

9. $0.0034 \times 23 =$ _____

10. $6.12 \times 3.4 =$ _____

11. $7.81 \times 56 =$ _____

12. $5.25 \times 0.01 =$ _____

13. $6.79 \times 8.3 =$ _____

14. $0.044 \times 0.9 =$ _____

15. $0.09 \times 0.04 =$ _____

16. $7.05 \times 0.3 =$ _____

17. $98 \times 0.11 =$ _____

18. $0.931 \times 100 =$ _____

19. $7.02 \times 5.1 =$ _____

20. $0.034 \times 0.0048 =$ _____

21. $1{,}000 \times 0.00342 =$ _____

22. $405 \times 1.52 =$ _____

23. $8.8 \times 6.7 =$ _____

24. $13.5 \times 4.7 =$ _____

25. $69.1 \times 0.001 =$ _____

26. $10.4 \times 10.5 =$ _____

27. $0.059 \times 0.0691 =$ _____

28. $0.101 \times 121.1 =$ _____

Directions Solve the following word problems with multiplication.

29. Lionel works part-time with a construction company and earns $24.50 per day. How much will Lionel earn working 5 days? _____

30. Regina earns $7.50 per hour straight time. Compute Regina's time and one-half rate by finding the product of $7.50 and 1.5. _____

Name Date Period

Scientific Notation with Positive Exponents

EXAMPLE Write in scientific notation. $2{,}300{,}000 = 2.3 \times 10^6$

- 10^6 ← an exponent
- a power of ten
- 2.3 ↑ a number between one and ten

Directions Rewrite the following numbers using scientific notation.

1. 4,200 = _____
2. 6,250 = _____
3. 82,100 = _____
4. 50,000 = _____
5. 72,300 = _____
6. 15,080 = _____
7. 1,800 = _____
8. 29,000 = _____
9. 500,000 = _____
10. 600,000 = _____
11. 700,000,000 = _____
12. 7,800,000 = _____
13. 10,000 = _____
14. 35,600 = _____
15. 81.52 = _____
16. 17.63 = _____
17. 236.5 = _____
18. 3,800 = _____
19. 19,000 = _____
20. 16.12 = _____
21. 610,000,000 = _____
22. 400,000,000 = _____
23. 790,000 = _____
24. 25.33 = _____
25. 1,420,000 = _____
26. 1,000,000,000 = _____
27. 34,000,000 = _____
28. 103,000 = _____
29. 23,000 = _____
30. 450,000,000 = _____
31. 11,000 = _____
32. 401,300 = _____
33. 311,400 = _____
34. 102.3 = _____
35. 927,000 = _____
36. 211,400 = _____
37. 100,000 = _____
38. 10,000 = _____
39. 344,000,000,000 = _____
40. 42,000,000,000 = _____
41. 12,000,000 = _____
42. 41,000,000 = _____
43. 764,200,000 = _____
44. 911,400,000 = _____
45. 102,000 = _____

Name Date Period

Scientific Notation with Negative Exponents

EXAMPLE Write in scientific notation. $0.006 = 6 \times 10^{-3}$

- 10^{-3} ← a negative exponent
- 10 ← a power of ten
- 6 ← a number between one and ten

Directions Rewrite the following numbers using scientific notation.

1. 0.008 = _____

2. 0.0715 = _____

3. 0.0062 = _____

4. 0.0007 = _____

5. 0.02 = _____

6. 0.0321 = _____

7. 0.0805 = _____

8. 0.0006 = _____

9. 0.00005 = _____

10. 0.03051 = _____

11. 0.00091 = _____

12. 0.0000007 = _____

13. 0.000003 = _____

14. 0.00000021 = _____

15. 0.0061 = _____

16. 0.00054 = _____

17. 0.000003 = _____

18. 0.00101 = _____

19. 0.000005 = _____

20. 0.000052 = _____

21. 0.000735 = _____

22. 0.0001433 = _____

23. 0.00021 = _____

24. 0.00093 = _____

25. 0.000000004 = _____

26. 0.00000000062 = _____

27. 0.423 = _____

28. 0.00316 = _____

29. 0.005071 = _____

30. 0.000078 = _____

31. 0.002103 = _____

32. 0.0000000005 = _____

33. 0.00000123 = _____

34. 0.00203 = _____

35. 0.000222 = _____

36. 0.0121 = _____

37. 0.10203 = _____

38. 0.000204 = _____

39. 0.0691 = _____

40. 0.0000203 = _____

41. 0.0000000304 = _____

42. 0.3044 = _____

43. 0.00077 = _____

44. 0.002058 = _____

45. 0.0004058 = _____

Name Date Period

Scientific Notation in Standard Form

EXAMPLES Write in standard form. 5.1×10^2 5.1×10^{-2}

$5.\underset{1}{1}\underset{2}{0}. = 510$ $0.\underset{2}{0}\underset{1}{5}.1 = 0.051$

Directions Rewrite each scientific notation in standard form.

1. $5.6 \times 10^2 =$ _____

2. $1.5 \times 10^2 =$ _____

3. $2 \times 10^4 =$ _____

4. $8 \times 10^3 =$ _____

5. $4.65 \times 10^3 =$ _____

6. $1.73 \times 10^4 =$ _____

7. $6.203 \times 10^5 =$ _____

8. $2.414 \times 10^5 =$ _____

9. $8.5 \times 10^7 =$ _____

10. $3 \times 10^7 =$ _____

11. $2 \times 10^1 =$ _____

12. $5.16 \times 10^2 =$ _____

13. $8.2 \times 10^3 =$ _____

14. $1.2 \times 10^1 =$ _____

15. $7.502 \times 10^2 =$ _____

16. $3.0052 \times 10^2 =$ _____

17. $2.61 \times 10^3 =$ _____

18. $5.85 \times 10^4 =$ _____

19. $7.05 \times 10^4 =$ _____

20. $6 \times 10^4 =$ _____

21. $3.008 \times 10^3 =$ _____

22. $1.9 \times 10^2 =$ _____

23. $4.002 \times 10^4 =$ _____

24. $7 \times 10^{10} =$ _____

25. $1.9 \times 10^{-8} =$ _____

26. $3 \times 10^{-9} =$ _____

27. $5.03 \times 10^{-1} =$ _____

28. $4.06 \times 10^{-4} =$ _____

29. $6.003 \times 10^{-5} =$ _____

30. $1.01 \times 10^{-5} =$ _____

31. $4.5 \times 10^{-5} =$ _____

32. $5.012 \times 10^{-3} =$ _____

33. $6 \times 10^{-5} =$ _____

34. $7.01 \times 10^{-4} =$ _____

35. $2.34 \times 10^{-3} =$ _____

36. $4.535 \times 10^{-2} =$ _____

37. $1 \times 10^{-8} =$ _____

38. $1.024 \times 10^{-2} =$ _____

39. $4.441 \times 10^{-5} =$ _____

40. $7.002 \times 10^{-4} =$ _____

41. $2.001 \times 10^{-8} =$ _____

42. $3.3 \times 10^{-3} =$ _____

43. $6.77 \times 10^{-4} =$ _____

44. $4.001 \times 10^{-3} =$ _____

45. $5 \times 10^{-10} =$ _____

Name Date Period

Scientific Notation

EXAMPLE Write in scientific notation. $0.00563 = 0.\overset{1}{0}\overset{2}{0}\overset{3}{5}63 = 5.63 \times 10^{-3}$

Directions Rewrite the following numbers using scientific notation.

1. 2,300,000 = _____

2. 59,000 = _____

3. 0.0005 = _____

4. 0.0000039 = _____

5. 23.41 = _____

6. 453 = _____

7. 25,400,000 = _____

8. 0.000000000843 = _____

9. 1,900,000,000 = _____

10. 39,400,000 = _____

11. 0.00000837 = _____

12. 567.2 = _____

13. 0.0001 = _____

14. 4,000 = _____

15. 0.00495 = _____

16. 567,000,000,000,000 = _____

EXAMPLE Write in standard form. $5.63 \times 10^{-3} = 0.\overset{3}{0}\overset{2}{0}\overset{1}{5}63 = 0.00563$

Directions Write the following numbers in standard form without exponents.

17. $2.3 \times 10^3 =$ _____

18. $4.29 \times 10^5 =$ _____

19. $8 \times 10^6 =$ _____

20. $5.7 \times 10^5 =$ _____

21. $4.94 \times 10^{-8} =$ _____

22. $7.03 \times 10^{-7} =$ _____

23. $6.1 \times 10^{10} =$ _____

24. $5.5 \times 10^{-3} =$ _____

25. $6.832 \times 10^6 =$ _____

26. $8.11 \times 10^{-2} =$ _____

27. $3 \times 10^{12} =$ _____

28. $1.35 \times 10^{-5} =$ _____

29. $1.39 \times 10^7 =$ _____

30. $9.04 \times 10^{-4} =$ _____

Name Date Period

Division of Decimals by Powers of Ten

EXAMPLE Write in standard form. Divide 53 ÷ 10 =

$$\begin{array}{r} 5.3 \\ 10\overline{)53.0} \\ -\ 50 \\ \hline 3\ 0 \\ -\ 3\ 0 \\ \hline 0 \end{array}$$

Directions Rewrite the following division problems in the standard form and divide.

1. 62 ÷ 10 = _____

2. 7.7 ÷ 100 = _____

3. 0.07 ÷ 100 = _____

4. 39 ÷ 1,000 = _____

5. 3 ÷ 10 = _____

6. 4.07 ÷ 100 = _____

7. 3.02 ÷ 100 = _____

8. 8.4 ÷ 1,000 = _____

9. 100 ÷ 1,000 = _____

10. 5.6 ÷ 10 = _____

11. 7 ÷ 100 = _____

12. 6.2 ÷ 1,000 = _____

13. 1.8 ÷ 1,000 = _____

14. 94 ÷ 100 = _____

15. 5 ÷ 1,000 = _____

16. 13 ÷ 1,000 = _____

17. 2.6 ÷ 1,000 = _____

18. 8.6 ÷ 100 = _____

19. 0.0023 ÷ 10 = _____

20. 2 ÷ 1,000 = _____

21. 3.8 ÷ 100 = _____

22. 4.02 ÷ 10,000 = _____

23. 566 ÷ 1,000 = _____

24. 2,963 ÷ 1,000 = _____

25. 8,203 ÷ 10,000 = _____

26. 4,002 ÷ 100 = _____

27. 0.706 ÷ 10 = _____

28. 9 ÷ 1,000 = _____

29. 0.04 ÷ 100 = _____

30. 0.3006 ÷ 100 = _____

31. 0.35 ÷ 1,000 = _____

32. 4.02 ÷ 100 = _____

33. 17 ÷ 1,000 = _____

34. 1 ÷ 1,000 = _____

35. 4.2 ÷ 10,000 = _____

36. 0.02 ÷ 10,000 = _____

37. 45.7 ÷ 10,000 = _____

38. 5,023.5 ÷ 10,000 = _____

39. 51.5 ÷ 1,000 = _____

40. 6.66 ÷ 10,000 = _____

41. 3.02 ÷ 1,000 = _____

42. 728 ÷ 10 = _____

43. 936 ÷ 10,000 = _____

44. 641.02 ÷ 10,000 = _____

45. 5.5 ÷ 100 = _____

Name Date Period

Division of Decimals

EXAMPLE Write in standard form.
Move decimal. Divide 23.4 by 0.1 =

$$\begin{array}{r} 234 \\ 0.1\overline{)23.4} \\ -\ 2 \\ \hline 03 \\ -\ 3 \\ \hline 04 \\ -\ 4 \\ \hline 0 \end{array}$$

Directions Rewrite the following division problems in the standard form and divide. Round each quotient to the nearest hundredth.

1. 14.4 ÷ 0.7 = _____

2. 0.46 ÷ 0.4 = _____

3. 0.98 ÷ 0.8 = _____

4. 10 ÷ 5.5 = _____

5. 1.5 ÷ 0.9 = _____

6. 2.6 ÷ 1.5 = _____

7. 0.06 ÷ 0.7 = _____

8. 40 ÷ 1.2 = _____

9. 7.7 ÷ 0.03 = _____

10. 5.6 ÷ 0.12 = _____

11. 12.3 ÷ 1.1 = _____

12. 6.99 ÷ 1.2 = _____

13. 9.12 ÷ 0.9 = _____

14. 28.04 ÷ 0.7 = _____

15. 3.5 ÷ 3 = _____

16. 6.33 ÷ 0.07 = _____

17. 1 ÷ 0.9 = _____

18. 2.2 ÷ 13 = _____

19. 30 ÷ 89 = _____

20. 5.06 ÷ 1.2 = _____

21. 5 ÷ 1.5 = _____

22. 49.9 ÷ 3.4 = _____

23. 2 ÷ 4.5 = _____

24. 0.506 ÷ 0.403 = _____

25. 4.06 ÷ 2.02 = _____

26. 0.0008 ÷ 0.04 = _____

27. 0.045 ÷ 0.08 = _____

28. 3.91 ÷ 2.6 = _____

Directions Solve the following word problems with division.

29. Kathleen purchases tomatoes for lunch. If the tomatoes are priced at 4 pounds for $4.24, how much will she pay for one pound?

30. A carton of six colas sells for $4.62. How much does one cola cost?

Name Date Period

Basic Operations with Decimals

EXAMPLES

Add.

$$\begin{array}{r} 2.3 \\ +\ 5.67 \\ \hline 7.97 \end{array}$$

Subtract.

$$\begin{array}{r} {\scriptstyle 5\ 9\ 10} \\ 3\not{6}.\not{0}\not{0} \\ -\ 0.93 \\ \hline 35.07 \end{array}$$

Multiply.

$$\begin{array}{r} 2.2 \\ \times\ \ .9 \\ \hline 1.98 \end{array}$$

Divide.

$$\begin{array}{r} .3822 \\ 9\overline{)3.4400} \\ -\ 27 \\ \hline 74 \\ -\ 72 \\ \hline 20 \\ -\ 18 \\ \hline 20 \\ -\ 18 \\ \hline 2 \end{array}$$

Directions Add.

1. 2.3 + 5.67 = _____

2. 45 + 9.97 + 0.055 = _____

3. 3.04 + 0.056 + 0.7 = _____

4. 67.3 + 34.09 + 4.45 = _____

5. 0.0745 + 0.45 + 0.087202 = _____

6. 3.45 + 0.0923 + 3.07 = _____

7. 2.33 + 0.76 + 74.9 + 4.4 = _____

8. 0.0348 + 0.2 + 4 + 4.45 = _____

Directions Subtract.

9. 36 − 0.93 = _____

10. 4.5 − 2.09 = _____

11. 5.943 − 0.56 = _____

12. 0.0982 − 0.039 = _____

13. 2.9 − 0.8033 = _____

14. 50.4 − 28.48 = _____

15. 1 − 0.97 = _____

16. 345 − 23.9 = _____

Directions Multiply.

17. 2.2 × 0.9 = _____

18. 34 × 5.2 = _____

19. 6.7 × 0.67 = _____

20. 45.3 × 0.23= _____

21. 30.5 × 4.5 = _____

22. 3.409 × 0.42 = _____

23. 90.4 × 2.11 = _____

24. 5.63 × 0.941 = _____

Directions Divide. Round the quotients to the nearest hundredths.

25. 3.44 ÷ 9 = _____

26. 98.3 ÷ 20 = _____

27. 1.304 ÷ 1.1 = _____

28. 36 ÷ 0.7 = _____

29. 3 ÷ 1.7 = _____

30. 5.606 ÷ 25 = _____

Name Date Period

Decimals to Fractions

EXAMPLE Rename 0.6 as a fraction. Simplify if necessary.

$0.6 = \frac{6}{10} = \frac{3}{5}$

Directions Rewrite each decimal as a fraction or a mixed number. Simplify the answers to the lowest terms.

1. 0.51 =		**25.** 0.9 =		**49.** 0.353 =	
2. 0.07 =		**26.** 0.102 =		**50.** 7.2 =	
3. 0.5 =		**27.** 0.052 =		**51.** 0.0004 =	
4. 0.2 =		**28.** 0.0071 =		**52.** 0.1004 =	
5. 0.003 =		**29.** 0.004 =		**53.** 46.85 =	
6. 0.007 =		**30.** 0.38 =		**54.** 0.999 =	
7. 0.75 =		**31.** 15.1 =		**55.** 0.122 =	
8. 0.82 =		**32.** 3.75 =		**56.** 0.01 =	
9. 0.15 =		**33.** 0.25 =		**57.** 0.106 =	
10. 1.5 =		**34.** 2.25 =		**58.** 0.004 =	
11. 0.62 =		**35.** 1.82 =		**59.** 0.147 =	
12. 0.085 =		**36.** 0.21 =		**60.** 54.06 =	
13. 0.008 =		**37.** 1.002 =		**61.** 1.85 =	
14. 0.001 =		**38.** 0.52 =		**62.** 9.43 =	
15. 2.6 =		**39.** 0.42 =		**63.** 7.78 =	
16. 0.022 =		**40.** 2.125 =		**64.** 4.14 =	
17. 0.04 =		**41.** 0.54 =		**65.** 0.335 =	
18. 20.6 =		**42.** 0.0085 =		**66.** 1.38 =	
19. 5.03 =		**43.** 4.48 =		**67.** 0.34 =	
20. 4.1 =		**44.** 1.53 =		**68.** 0.554 =	
21. 200.6 =		**45.** 10.5 =		**69.** 0.332 =	
22. 0.0012 =		**46.** 1.18 =		**70.** 0.246 =	
23. 0.041 =		**47.** 24.5 =			
24. 0.101 =		**48.** 0.0002 =			

Name Date Period

Fractions to Decimals

EXAMPLE Rename $\frac{2}{3}$ as a decimal.

Round to nearest hundredth.

$$3\overline{)2.000} \quad .666 \rightarrow 0.67$$
$$-\ 18$$
$$20$$
$$-\ 18$$
$$20$$
$$-\ 18$$
$$2$$

Directions Write each fraction as a decimal rounded to the nearest hundredth.

1. $\frac{1}{15}$ = _____	**16.** $\frac{3}{11}$ = _____	**31.** $\frac{2}{17}$ = _____
2. $\frac{3}{16}$ = _____	**17.** $\frac{1}{20}$ = _____	**32.** $\frac{1}{3}$ = _____
3. $\frac{1}{10}$ = _____	**18.** $\frac{14}{15}$ = _____	**33.** $\frac{2}{19}$ = _____
4. $\frac{4}{5}$ = _____	**19.** $\frac{2}{5}$ = _____	**34.** $\frac{1}{6}$ = _____
5. $\frac{1}{17}$ = _____	**20.** $\frac{5}{21}$ = _____	**35.** $\frac{3}{20}$ = _____
6. $\frac{13}{14}$ = _____	**21.** $\frac{3}{12}$ = _____	**36.** $\frac{11}{20}$ = _____
7. $\frac{6}{9}$ = _____	**22.** $\frac{6}{7}$ = _____	**37.** $\frac{9}{11}$ = _____
8. $\frac{1}{9}$ = _____	**23.** $\frac{3}{7}$ = _____	**38.** $\frac{6}{19}$ = _____
9. $\frac{9}{10}$ = _____	**24.** $\frac{1}{11}$ = _____	**39.** $\frac{7}{11}$ = _____
10. $\frac{3}{5}$ = _____	**25.** $\frac{1}{8}$ = _____	**40.** $\frac{10}{11}$ = _____
11. $\frac{5}{14}$ = _____	**26.** $\frac{2}{15}$ = _____	**41.** $\frac{5}{6}$ = _____
12. $\frac{3}{4}$ = _____	**27.** $\frac{15}{17}$ = _____	**42.** $\frac{7}{16}$ = _____
13. $\frac{1}{2}$ = _____	**28.** $\frac{3}{13}$ = _____	**43.** $\frac{5}{13}$ = _____
14. $\frac{6}{16}$ = _____	**29.** $\frac{3}{16}$ = _____	**44.** $\frac{6}{13}$ = _____
15. $\frac{11}{12}$ = _____	**30.** $\frac{5}{16}$ = _____	**45.** $\frac{8}{9}$ = _____

Name Date Period

Changing Fractions to Decimals

EXAMPLE Change the fraction to a decimal. Divide to 3 decimal places. Then round to 2 places.

Hint: Try to simplify the fraction before division.

$$\frac{2}{12} = \frac{1}{6} = 6\overline{)1.000} = 0.166 = 0.17$$

Directions Change these fractions to decimals. Divide to 3 places. Then round to 2 places.

1. $\frac{7}{9}$ = _____

2. $\frac{5}{9}$ = _____

3. $\frac{6}{11}$ = _____

4. $\frac{7}{9}$ = _____

5. $\frac{10}{11}$ = _____

6. $\frac{11}{12}$ = _____

7. $\frac{7}{8}$ = _____

8. $\frac{12}{13}$ = _____

9. $\frac{2}{10}$ = _____

10. $\frac{4}{9}$ = _____

11. $\frac{3}{12}$ = _____

12. $\frac{2}{15}$ = _____

13. $\frac{1}{8}$ = _____

14. $\frac{1}{9}$ = _____

15. $\frac{20}{30}$ = _____

16. $\frac{25}{75}$ = _____

17. $\frac{50}{60}$ = _____

18. $\frac{12}{36}$ = _____

19. $\frac{12}{24}$ = _____

20. $\frac{55}{110}$ = _____

21. $\frac{35}{40}$ = _____

22. $\frac{22}{33}$ = _____

23. $\frac{7}{28}$ = _____

24. $\frac{9}{36}$ = _____

25. $\frac{20}{75}$ = _____

26. $\frac{3}{13}$ = _____

27. $\frac{17}{34}$ = _____

28. $\frac{3}{14}$ = _____

29. $\frac{5}{30}$ = _____

30. $\frac{4}{25}$ = _____

Name Date Period

Writing Ratios

EXAMPLE Show a ratio in its three forms.

$\frac{1}{2}$ = 1:2 = 1 to 2

Directions Express the ratios using the other two forms.

1. $\frac{4}{3}$ _____

2. 4:7 _____

3. 9 to 12 _____

4. $\frac{5}{8}$ _____

5. 12:16 _____

6. 5 to 15 _____

7. $\frac{9}{3}$ _____

8. $\frac{12}{15}$ _____

9. $\frac{16}{17}$ _____

10. $\frac{22}{11}$ _____

11. 23:80 _____

12. 3 to 7 _____

13. 4 to 9 _____

14. 5 to 18 _____

15. 26:27 _____

16. 32:42 _____

17. $\frac{34}{45}$ _____

18. 2 to 18 _____

19. 33:34 _____

20. $\frac{7}{23}$ _____

Directions Count the number of like symbols and write the ratios for each.

21. Write the ratio of the number of @'s to #'s. _____

22. Write the ratio of the number of @'s to %'s. _____

23. Write the ratio of the number of @'s to $'s. _____

24. Write the ratio of the number of *'s to *'s. _____

25. Write the ratio of the number of #'s to %'s. _____

26. Write the ratio of the number of #'s to *'s. _____

27. Write the ratio of the number of #'s to @'s. _____

28. Write the ratio of the number of *'s to @'s. _____

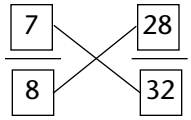
29. Write the ratio of the number of *'s to $'s. _____

30. Write the ratio of the number of %'s to #'s. _____

@ # % $ # * & $ $
# @ $ * & & # @
# @ * & & * * # @
& # @ $ $ $ $ #
@ @ $ % % & * *
& * % % $ # $ %
& * & $ # @ @ #
$ $ % % * & * &
* & * & * * * & $ $
# # @ @ # # * *

Proportions

EXAMPLE Do $\frac{7}{8}$ and $\frac{28}{32}$ form a proportion?



8×28
224

7×32
224

The cross products are both 224. The cross products are equal, so the ratios form a proportion.

$\frac{7}{8} = \frac{28}{32}$

Directions Use cross products to decide if the ratios are equal. Write an equal sign (=) if the ratios form a proportion. Write an inequality symbol ($\neq$) if the ratios do not form a proportion.

1. $\frac{1}{3}$ $\frac{4}{12}$

2. $\frac{15}{80}$ $\frac{4}{75}$

3. $\frac{2}{7}$ $\frac{24}{86}$

4. $\frac{108}{18}$ $\frac{18}{3}$

5. $\frac{5}{25}$ $\frac{25}{150}$

6. $\frac{2}{3}$ $\frac{9}{12}$

7. $\frac{10}{16}$ $\frac{5}{8}$

8. $\frac{7}{8}$ $\frac{15}{16}$

9. $\frac{3}{4}$ $\frac{6}{8}$

10. $\frac{5}{16}$ $\frac{25}{86}$

11. $\frac{96}{180}$ $\frac{16}{30}$

12. $\frac{2}{4}$ $\frac{4}{8}$

13. $\frac{4}{32}$ $\frac{16}{64}$

14. $\frac{9}{12}$ $\frac{27}{36}$

15. $\frac{3}{15}$ $\frac{9}{45}$

16. $\frac{72}{54}$ $\frac{9}{7}$

17. $\frac{3}{9}$ $\frac{9}{27}$

18. $\frac{1}{4}$ $\frac{2}{4}$

19. $\frac{1}{3}$ $\frac{5}{6}$

20. $\frac{4}{5}$ $\frac{20}{25}$

21. $\frac{10}{19}$ $\frac{30}{39}$

22. $\frac{3}{6}$ $\frac{5}{10}$

23. $\frac{1}{4}$ $\frac{2}{8}$

24. $\frac{5}{8}$ $\frac{3}{4}$

25. $\frac{2}{7}$ $\frac{24}{84}$

Name Date Period

Ratios and Proportions

EXAMPLE 14 books to 2 readers

Write the ratio as a fraction. Simplify if necessary.

$$\frac{14}{2} = \frac{7}{1}$$

Directions Write a ratio to compare each of the following. Simplify to lowest terms.

1. 12 music CD's to 4 tapes

_____

2. 10 automobiles to 13 bikes

_____

3. 24 apples to 8 oranges

_____

4. 125 miles to 5 gallons of gas

_____

5. 22 cats to 33 dogs

_____

6. 24 baseballs to 38 players

_____

7. 14 lb of flour to 7 shoppers

_____

8. 8 students to 18 tables

_____

9. 28 TV's to 56 radios

_____

10. 22 planes to 11 trains

_____

EXAMPLE Cross-multiply. Divide.

$$\frac{72}{n} = \frac{8}{2}$$

$8n = 72 \times 2$ $\quad 8n = 144$ $\quad n = 144 \div 8$

$n = 18$

Directions Solve these proportions using the cross-product method. Express improper fractions as mixed numbers.

11. $\frac{7}{n} = \frac{14}{10}$

12. $\frac{18}{24} = \frac{2}{n}$

13. $\frac{10}{15} = \frac{25}{n}$

14. $\frac{11}{13} = \frac{n}{39}$

15. $\frac{48}{10} = \frac{n}{5}$

Name Date Period

Using Proportions

EXAMPLE Cross-multiply. Compare products.

$\overset{30}{\frac{2}{3}} \quad \frac{11}{15}\overset{33}{}$ $\qquad 2 \times 15 = 30 \qquad 3 \times 11 = 33$

$\frac{2}{3} < \frac{11}{15}$

Directions Use cross products and use $<$, $>$, or $=$ for each.

1. $\frac{12}{11}$ $\frac{10}{9}$

2. $\frac{7}{10}$ $\frac{20}{32}$

3. $\frac{22}{40}$ $\frac{20}{33}$

4. $\frac{8}{13}$ $\frac{22}{30}$

5. $\frac{8}{9}$ $\frac{13}{15}$

6. $\frac{15}{21}$ $\frac{17}{18}$

Directions Use the cross-product method to solve for the unknown.

7. $\frac{14}{30} = \frac{n}{90}$

8. $\frac{n}{3} = \frac{25}{12}$

9. $\frac{n}{27} = \frac{6}{9}$

10. $\frac{18}{n} = \frac{3}{12}$

11. $\frac{7}{n} = \frac{28}{56}$

12. $\frac{56}{9} = \frac{n}{4}$

Directions Write and solve proportions using the cross-product method. Round your answers to the nearest tenths place.

13. Eldo can ride his bike 15 miles in 2 hours. How many miles can he ride in 7 hours?

14. Lacy can in-line skate 9 miles an hour. How many hours will it take her to do 30 miles?

15. Karen and Patrick worked together stringing beads for necklaces. If they can string 50 beads in 9 minutes, how long will it take for them to string 725 beads?

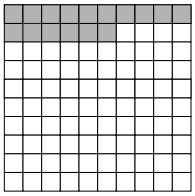
Name Date Period

Meaning of Percent

EXAMPLE Shade the boxes to show percent.

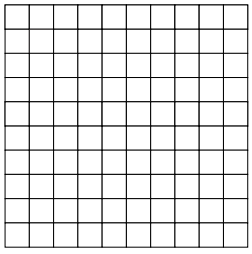
16% = 16 out of 100

Shade 16 boxes.

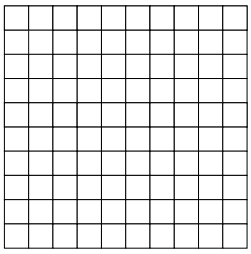


Directions Shade these percents.

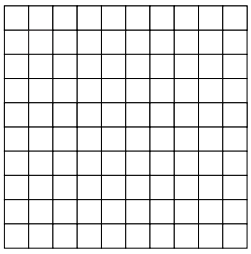
1. 23%



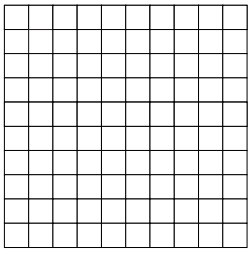
2. 75%



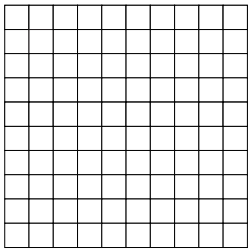
3. 30%



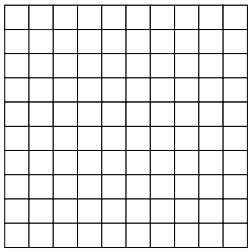
4. 40%



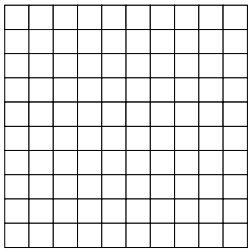
5. 33%



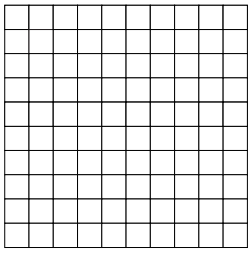
6. 80%



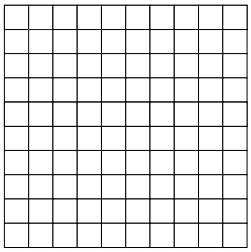
7. 9%



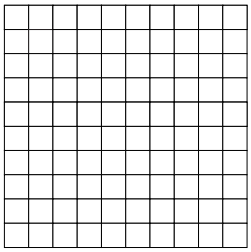
8. 17%



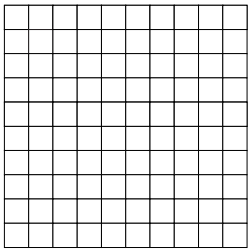
9. 95%



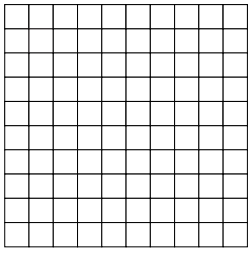
10. 45%



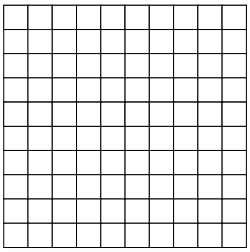
11. 60%



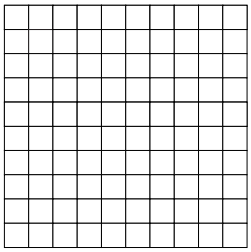
12. 100%



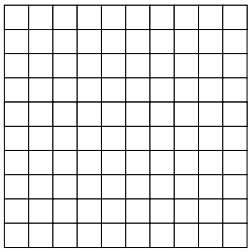
13. 55%



14. 12%



15. 68%



Name Date Period

Changing Percents to Decimals and Fractions

EXAMPLES

14% Write as a decimal. Drop percent sign. Add decimal point.
14% = 0.14

14% Write as a fraction. Drop percent sign.
Write number as a numerator over denominator of 100.
Simplify if necessary.
$14\% = \frac{14}{100} = \frac{7}{50}$

Directions Write these percents as decimals.

1. 17% = _____ **7.** 90% = _____ **13.** 39% = _____

2. 33% = _____ **8.** 37% = _____ **14.** 66% = _____

3. 60% = _____ **9.** 55% = _____ **15.** 48% = _____

4. 22% = _____ **10.** 75% = _____ **16.** 34% = _____

5. 41% = _____ **11.** 61% = _____ **17.** 100% = _____

6. 46% = _____ **12.** 80% = _____ **18.** 1% = _____

Directions Write these decimals as fractions. Simplify your answers.

19. 0.37 = _____ **25.** 0.33 = _____ **31.** 0.02 = _____

20. 0.18 = _____ **26.** 0.09 = _____ **32.** 0.88 = _____

21. 0.11 = _____ **27.** 0.40 = _____ **33.** 0.25 = _____

22. 0.05 = _____ **28.** 0.50 = _____ **34.** 0.35 = _____

23. 0.08 = _____ **29.** 0.68 = _____ **35.** 0.90 = _____

24. 0.01 = _____ **30.** 0.10 = _____ **36.** 0.55 = _____

Directions Write these percents as decimals and fractions. Simplify your answers.

37. 24% = _____ **42.** 72% = _____

38. 30% = _____ **43.** 87% = _____

39. 23% = _____ **44.** 95% = _____

40. 33% = _____ **45.** 74% = _____

41. 70% = _____

Name Date Period

Decimals to Percents

EXAMPLE Rename 0.63 as a percent by moving the decimal point two places to the right and adding the percent symbol.

0.63 = 63%

Directions Rewrite each decimal as a percent.

1. 0.36 = _____	**21.** 0.0045 = _____	**41.** 25.0 = _____
2. 1.35 = _____	**22.** 0.6031 = _____	**42.** 3.44 = _____
3. 0.05 = _____	**23.** 5.05 = _____	**43.** 22.332 = _____
4. 0.6 = _____	**24.** 0.2207 = _____	**44.** 5.556 = _____
5. 0.78 = _____	**25.** 0.41 = _____	**45.** 2.33 = _____
6. 0.45 = _____	**26.** 0.2246 = _____	**46.** 0.75 = _____
7. 0.0088 = _____	**27.** 0.032 = _____	**47.** 15.02 = _____
8. 0.035 = _____	**28.** 0.01 = _____	**48.** 0.0062 = _____
9. 0.122 = _____	**29.** 0.1 = _____	**49.** 30.452 = _____
10. 0.02 = _____	**30.** 0.112 = _____	**50.** 73.1 = _____
11. 0.4 = _____	**31.** 0.172 = _____	**51.** 33.4 = _____
12. 0.21 = _____	**32.** 1.75 = _____	**52.** 1.433 = _____
13. 2.09 = _____	**33.** 2 = _____	**53.** 43.14 = _____
14. 2.3 = _____	**34.** 62 = _____	**54.** 12.06 = _____
15. 6.12 = _____	**35.** 4.09 = _____	**55.** 48.045 = _____
16. 4.5 = _____	**36.** 3.1 = _____	**56.** 2.332 = _____
17. 0.065 = _____	**37.** 9.21 = _____	**57.** 2.398 = _____
18. 0.0081 = _____	**38.** 0.155 = _____	**58.** 12.124 = _____
19. 0.205 = _____	**39.** 80.0 = _____	**59.** 42.46 = _____
20. 0.244 = _____	**40.** 7.02 = _____	**60.** 0.0056 = _____

Name Date Period

Major Elements of a Percent Sentence

EXAMPLES

	Rate	Base	Percentage
15% of what number is 52?	15%	*n*	52
What percent of 22 is 11?	*n*	22	11

Directions Identify the rate, base, and percentage for the following percent sentences. Use the letter *n* to represent a missing value.

	Rate	Base	Percentage
1. 56% of 90 is what number?			
2. What percent of 50 is 40?			
3. What percent of 86 is 43?			
4. 88% of 50 is what number?			
5. 100% of what number is 176?			
6. 200% of 50 is what number?			
7. 90% of what number is 64?			
8. What percent of 49 is 100?			
9. 70% of 50 is what number?			
10. 80% of 20 is what number?			
11. What percent of 120 is 90?			
12. What percent of 48 is 96?			
13. 150% of what number is 300?			
14. 6% of 33 is what number?			
15. 12% of what number is 70?			
16. What percent of 200 is 300?			
17. What percent of 5 is 30?			
18. 9% of 56 is what number?			
19. 33% of 129 is what number?			
20. 3% of what number is 27?			

Name Date Period

Find the Percentage

EXAMPLE 8% of 20 is _____

8% of 20 is n
$0.08 \times 20 = n$
$1.6 = n$

Directions Solve for the percentage.

1. 9% of 50 is _____
2. 4% of 53 is _____
3. 28% of 4 is _____
4. 6% of 125 is _____
5. 2% of 86 is _____
6. 43% of 14 is _____
7. 75% of 92 is _____
8. 21% of 34 is _____
9. 92% of 62 is _____
10. 53% of 80 is _____
11. 15% of 28 is _____
12. 92% of 65 is _____
13. 3% of 2.1 is _____
14. 40% of 3.5 is _____
15. 7% of 0.7 is _____
16. 6% of 2.3 is _____
17. 122% of 42 is _____
18. 136% of 5 is _____
19. 200% of 73 is _____
20. 0.4% of 96 is _____
21. 7.2% of 48 is _____
22. 5.3% of 70 is _____
23. 0.8% of 245 is _____
24. 1.6% of 1.4 is _____
25. 2.8% of 9.02 is _____
26. 2.4% of 76 is _____
27. 5% of 0.083 is _____
28. 0.6% of 435 is _____
29. 0.7% of 7.49 is _____
30. 129% of 4.2 is _____
31. 0.03% of 141 is _____
32. 0.8% of 0.2 is _____
33. 0.82% of 403 is _____
34. 245% of 2.6 is _____
35. 10% of 45 is _____
36. 3.4% of 500 is _____
37. 45% of 100 is _____
38. 23.4% of 300 is _____
39. 140% of 62 is _____
40. 7% of 250 is _____
41. 0.46% of 746 is _____
42. 6.5% of 30 is _____
43. 7.9% of 500 is _____
44. 200% of 0.33 is _____
45. 9% of 9 is _____

Name Date Period

Find the Base

EXAMPLE

5% of _____ is 1.4

5% of n is 1.4

$0.05 \times n = 1.4$

$n = 1.4 \div 0.05$

$n = 28$

$$0.5\overline{)1.40} \quad 28$$
$$-\ 1\ 0$$
$$40$$
$$-\ 40$$

Directions Solve for the base.

1. 5% of _____ is 4.1

2. 2% of _____ is 3.6

3. 6% of _____ is 1.8

4. 3% of _____ is 0.27

5. 7% of _____ is 0.196

6. 4% of _____ is 1.28

7. 50% of _____ is 2.7

8. 35% of _____ is 30.8

9. 6% of _____ is 0.078

10. 8% of _____ is 0.32

11. 2.5% of _____ is 0.15

12. 7.3% of _____ is 2.044

13. 120% of _____ is 50.4

14. 3.4% of _____ is 2.38

15. 9% of _____ is 0.315

16. 5% of _____ is 0.13

17. 5% of _____ is 0.0235

18. 41% of _____ is 0.82

19. 3% of _____ is 0.045

20. 245% of _____ is 191.1

21. 9% of _____ is 0.0594

22. 0.3% of _____ is 0.135

23. 0.75% of _____ is 0.9

24. 0.8% of _____ is 0.4

25. 4% of _____ is 0.0176

26. 0.21% of _____ is 0.0735

27. 150% of _____ is 135

28. 125% of _____ is 62.5

29. 5.2% of _____ is 0.0988

30. 3.4% of _____ is 0.3094

31. 0.5% of _____ is 1.19

32. 0.21% of _____ is 0.0147

33. 0.32% of _____ is 0.32

34. 0.75% of _____ is 7.5

35. 8% of _____ is 0.416

36. 1.4% of _____ is 0.196

37. 6% of _____ is 0.138

38. 5% of _____ is 0.115

39. 120% of _____ is 102

40. 1% of _____ is 0.03

41. 0.9% of _____ is 1.35

42. 6.3% of _____ is 0.252

43. 8% of _____ is 16

44. 4% of _____ is 0.024

45. 1.6% of _____ is 3.376

Name Date Period

Find the Rate

EXAMPLE _____% of 80 is 4.8

n% of 80 is 4.8

$n \times 0.80 = 4.8$

$n = 4.8 \div 0.80$

$n = 6\%$

$$0.80\overline{)4.8} \quad \begin{array}{r} 6 \\ -\ 4\ 8 \\ \hline 0 \end{array}$$

or

$n \times 80 = 4.8$

$n = \frac{4.8}{80}$

$n = 0.06 = 6\%$

Directions Solve for the rate.

1. _____ % of 25 is 5
2. _____ % of 35 is 1.05
3. _____ % of 70 is 3.5
4. _____ % of 30 is 1.8
5. _____ % of 80 is 5.6
6. _____ % of 20 is 1.8
7. _____ % of 80 is 0.56
8. _____ % of 200 is 102
9. _____ % of 20 is 7
10. _____ % of 300 is 45
11. _____ % of 100 is 9
12. _____ % of 2,000 is 360
13. _____ % of 35 is 2.8
14. _____ % of 305 is 48.8
15. _____ % of 20 is 30
16. _____ % of 64 is 112
17. _____ % of 10.5 is 0.84
18. _____ % of 250 is 70
19. _____ % of 38 is 1.14
20. _____ % of 72 is 1.08
21. _____ % of 206 is 16.48
22. _____ % of 500 is 4.5
23. _____ % of 2.06 is 0.1442
24. _____ % of 600 is 420
25. _____ % of 700 is 9.8
26. _____ % of 40 is 0.32
27. _____ % of 200 is 0.14
28. _____ % of 3,000 is 1.8
29. _____ % of 2.5 is 0.9
30. _____ % of 4.2 is 0.546
31. _____ % of 4 is 0.12
32. _____ % of 400 is 0.08
33. _____ % of 22 is 56.1
34. _____ % of 30 is 106.5
35. _____ % of 80 is 14
36. _____ % of 15 is 0.56
37. _____ % of 90 is 5.4
38. _____ % of 50 is 100
39. _____ % of 23 is 2.3
40. _____ % of 120 is 300
41. _____ % of 22 is 0.33
42. _____ % of 30 is 2.85
43. _____ % of 70 is 4.9
44. _____ % of 0.16 is 0.000136
45. _____ % of 50 is 9

Name Date Period

Percent Sentences

EXAMPLES

Percentage	Base	Rate
25% of 80 is _____	*25*% of _____ is 52	_____% of 44 is 11
25% × 80 = *n*	25% × *n* = 52	*n*% × 44 = 11
0.25 × 80 = 20	0.25*n* = 52	*n* × 0.44 = 11
	n = 208	*n* = 11 ÷ 0.44
		n = 25%

Directions Solve for the percentage.

1. 25% of 60 is _____

2. 82% of 50 is _____

3. 90% of 60 is _____

4. 35% of 36 is _____

5. 92% of 100 is _____

6. 20% of 30 is _____

Directions Solve for the base.

7. 15% of _____ is 9

8. 60% of _____ is 15

9. 20% of _____ is 8

10. 62% of _____ is 10.54

11. 53% of _____ is 106

12. 92% of _____ is 23

Directions Solve for the rate.

13. _____ % of 9.5 is 7.6

14. _____ % of 70 is 21

15. _____ % of 45 is 4.05

16. _____ % of 30 is 21

17. _____ % of 80 is 72

18. _____ % of 26 is 0.65

Directions Complete each percent sentence.

19. _____ % of 2.5 is 0.375

20. 5.5% of _____ is 0.2475

21. 0.5% of 75 is _____

22. 2.8% of _____ is 18.2

23. _____ % of 240 is 192

24. 75% of _____ is 225

25. 10% of _____ is 0.26

Name Date Period

Using Proportions

EXAMPLES

Find base.

25% of n is 17.5

$$\frac{25}{100} = \frac{17.5}{n}$$
$$100 \times 17.5 = 25n$$
$$1{,}750 = 25n$$
$$\frac{1{,}750}{25} = \frac{25n}{25}$$
$$70 = n$$

Find rate.

n% of 40 is 24

$$\frac{n}{100} = \frac{24}{40}$$
$$100 \times 24 = 40n$$
$$2{,}400 = 40n$$
$$\frac{2{,}400}{40} = \frac{40n}{40}$$
$$60 = n$$

Find percentage.

7% of 80 is n

$$\frac{7}{100} = \frac{n}{80}$$
$$100n = 7 \times 80$$
$$100n = 560$$
$$\frac{100n}{100} = \frac{560}{100}$$
$$n = 5.6$$

Directions Write proportions and solve for the unknown.

1. 20% of n is 9.6 _____

2. n% of 35 is 5.6 _____

3. 70% of 32 is n _____

4. 30% of n is 120 _____

5. n% of 50 is 11.5 _____

6. 85% of 36 is n _____

7. 90% of n is 270 _____

8. n% of 97 is 48.5 _____

9. 80% of 40 is n _____

10. 23% of n is 73.6 _____

11. n% of 60 is 24 _____

12. 35% of n is 24.5 _____

13. 18% of 350 is n _____

14. n% of 29 is 2.03 _____

15. 9% of n is 4.68 _____

Discount

EXAMPLES Find the sale price of a music CD that lists for $18.50, if the discount rate is 20%.

Step 1
$18.50 list price
× .20
$3.70 discount

Step 2
$18.50 list price
− 3.70 discount
$14.80 price after discount

Find the discount rate if a $25.00 DVD is on sale for $21.25.

Step 1
$25.00 list price
− 21.25 discount price
$3.75 discount

$$25\overline{)3.75} = .15 = 15\%$$

$$\begin{array}{r} .15 \\ 25\overline{)3.75} \\ -\ 2\,5 \\ \hline 125 \\ -\ 125 \\ \hline \end{array}$$

Directions Solve these discount problems. When necessary round answers to the nearest cent.

1. $175.00 list price
10% discount rate
Discount _____
Sale price _____

2. $80.00 list price
20% discount rate
Discount _____
Sale price _____

3. CD list price $22.00
15% discount rate
Discount _____
Sale price _____

4. Videotape list price $50.00
Sale price $20.00
Discount _____
Discount rate _____

5. Computer list price $950.00
Discount rate 10%
Discount _____
Sale price _____

6. Radio list price $75.00
Discount rate 15%
Discount _____
Sale price _____

7. Stereo list price $150.00
Sale price $120.00
Discount _____
Discount rate _____

8. Disk drive list price $150.00
Discount rate 20%
Discount _____
Sale price _____

9. Television list price $395.00
Discount rate 10%
Discount _____
Sale price _____

10. Jeans list price $34.95
Discount rate 10%
Discount _____
Sale price _____

Sales Tax

EXAMPLE Compute 6% sales tax on $13.05

$13.05 cost before tax
× .06 tax rate
0.7830
0.79 ← Tax **always** rounds up.
The tax is $0.79 or 79 cents.

Directions Compute sales tax.

1. $2.75 at 5% _____

2. $6.15 at 7% _____

3. $24.95 at 7% _____

4. $120.00 at 5% _____

5. $1,200.00 at 6% _____

6. $16.75 at 6% _____

7. $100.00 at 6% _____

8. $30.10 at 7% _____

9. $0.45 at 5% _____

Directions Compute sales tax and total cost.

10. A book for $17.95
6% tax rate
Tax _____
Cost plus tax _____

11. Clock for $75.00
5% tax rate
Tax _____
Cost plus tax _____

12. Television for $299.99
7% tax rate
Tax _____
Cost plus tax _____

13. Table for $98.00
5% tax rate
Tax _____
Cost plus tax _____

14. Used car for $11,960.00
6% tax rate
Tax _____
Cost plus tax _____

15. Electric stove for $699.00
5% tax rate
Tax _____
Cost plus tax _____

Name Date Period

Simple Interest

EXAMPLE Compute the simple interest on a principal of $125.00 at an interest rate of 7% for 3 years.

$125.00 principal
× .07
$8.7500 interest for one year

$8.75 interest for one year
× 3 for 3 years
$26.25 interest for 3 years

Compute the simple interest on $200.00 at a rate of 6% for 9 months.

$200.00 principal
× .06
$12.00 interest for 1 year

$\frac{\$12}{1} \times \frac{9}{12}$ ← Write 9 months over 12 months to express time as years.

$\frac{12}{1} \times \frac{3}{4} = \frac{36}{4} = 9$

$9.00 is the interest for 9 months.

Directions Compute the simple interest.

1. Compute the simple interest for $750.00 at 7% for 5 years. _____

2. Compute the simple interest for $800.00 at 6% for 6 months. _____

3. Compute the simple interest for $1,200.00 at 9% for 10 years. _____

4. Compute the simple interest for $5,000.00 at 10% for 5 years. _____

5. Compute the simple interest for $6,200.00 at 8% for 10 years. _____

6. Compute the simple interest for $150.00 at 5% for 11 years. _____

7. Compute the simple interest for $48.00 at 5% for 6 months. _____

8. Compute the simple interest for $4,500.00 at 7% for 9 months. _____

9. Compute the simple interest for $395.00 at 3% for 24 months. _____

10. Compute the simple interest for $245.00 at 5% for 7 years. _____

Installment Buying

EXAMPLE Find the finance charge and balance with a 2% finance rate for $400.00.

Step 1
$400.00 previous balance
× .02 finance rate
$8.0000 finance charge

Step 2
$400.00 previous balance
+ 8.00 finance charge
$408.00

New balance before first payment

Step 3
$408.00
− 25.00 first month's payment
$383.00 new balance

Directions Complete the installment chart for a TV that cost $400.00. The monthly payments will be $25.00 and a 2% finance charge will be added to the unpaid balance.

Month	Previous Balance	Finance Charge	Before Payment	Monthly Payment	New Balance
June	$400.00	$8.00	$408.00	$25.00	$383.00
July	$383.00				
August					
September					
October					

Directions Complete the installment chart for a TV that cost $400.00 with a 1% finance charge added to the unpaid balance. The monthly payments are $25.00.

Month	Previous Balance	Finance Charge	Before Payment	Monthly Payment	New Balance
June					
July					
August					
September					
October					

Name Date Period

Commission

EXAMPLE Compute the commission for a real estate agent who sells a house for $95,000 and the commission rate is 3%.

$95,000.00 sale price
× .03 commission rate
$2,850.00 commission

Directions Compute the following sales commissions.

1. Amount is $4,500.00
Commission rate 5%
Commission _____

2. Amount is $48,000.00
Commission rate 3%
Commission _____

3. Amount is $3,400.00
Commission rate 3%
Commission _____

4. Amount is $500.00
Commission rate 5%
Commission _____

5. Amount is $1,000.00
Commission rate 3%
Commission _____

6. Amount is $1,600.00
Commission rate 3%
Commission _____

7. Amount is $450.00
Commission rate 5%
Commission _____

8. Amount is $1,700.00
Commission rate 4%
Commission _____

9. Amount is $3,400.00
Commission rate 5%
Commission _____

10. Amount is $950.00
Commission rate 10%
Commission _____

11. Amount is $560.00
Commission rate 5%
Commission _____

12. Amount is $880.00
Commission rate 4%
Commission _____

13. Amount is $234.00
Commission rate 11%
Commission _____

14. Amount is $911.00
Commission rate 4%
Commission _____

15. Amount is $260.00
Commission rate 9%
Commission _____

Tips

EXAMPLE Compute a 15% tip on a meal that costs $23.50.

$23.50 meal cost
× .15 tip rate
11750
2350
$3.5250 round to nearest cent

$3.53 rounded to nearest cent

$23.50 meal cost
× 3.53 tip
$27.03 total

Directions Compute the tip for each meal. Use 15% as a tip rate for each meal.

1. Meal cost $20.00
Tip _____
Meal total _____

2. Meal cost $27.20
Tip _____
Meal total _____

3. Meal cost $37.00
Tip _____
Meal total _____

4. Meal cost $25.00
Tip _____
Meal total _____

5. Meal cost $45.20
Tip _____
Meal total _____

6. Meal cost $18.00
Tip _____
Meal total _____

7. Meal cost $5.50
Tip _____
Meal total _____

8. Meal cost $11.90
Tip _____
Meal total _____

9. Meal cost $4.50
Tip _____
Meal total _____

Directions Compute the tip for each meal and round to the nearest dollar.

10. Meal cost $4.60
Tip _____
Meal total _____

11. Meal cost $15.50
Tip _____
Meal total _____

12. Meal cost $11.90
Tip _____
Meal total _____

13. Meal cost $14.70
Tip _____
Meal total _____

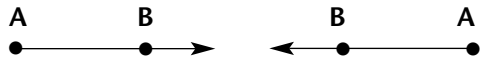
14. Meal cost $5.50
Tip _____
Meal total _____

15. Meal cost $7.95
Tip _____
Meal total _____

Name Date Period

Points, Lines, and Angles

EXAMPLE Make a construction to represent $\overrightarrow{AB}$.



Rays can be drawn from either direction.
The beginning point must be *A* as indicated $\overrightarrow{AB}$.

Directions Use the baseline provided to construct the following geometric constructions.

1. $\overrightarrow{BA}$ _____

2. $\angle ABC$ _____

3. $\angle XYZ$ _____

4. $\overrightarrow{AD}$ _____

5. $\overline{DZ}$ _____

6. Vertex *G* _____

7. Vertex *H* _____

8. $\overleftrightarrow{RT}$ _____

9. point *B* _____

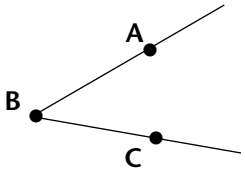
10. $\angle QRS$ _____

Name Date Period

Identifying Angles

EXAMPLE Construct an acute angle.

$\angle ABC$ is acute because $\angle B$ is less than 90 degrees.



Directions Construct these angles on the baselines given.

1. acute

_____

2. straight

_____

3. obtuse

_____

4. reflex

_____

5. right

_____

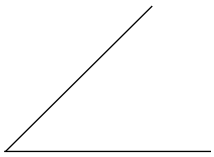
Name Date Period

Measuring Angles

EXAMPLE

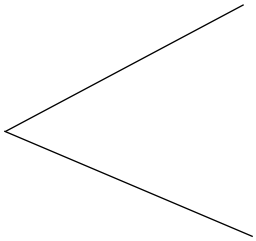
Place protractor on the angle so that the center is on the angle's vertex and the baseline is on one of the rays.

Make sure second ray crosses the scale. Read the scale.



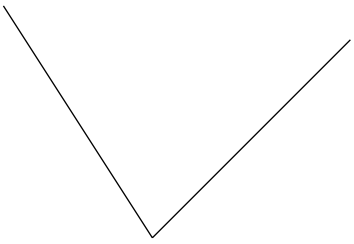
45°

Directions Use a protractor to measure these angles to the nearest degree. If necessary, use a straightedge to extend the sides of the angle.

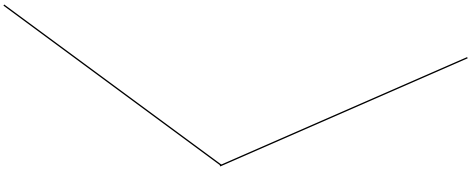


1. _____

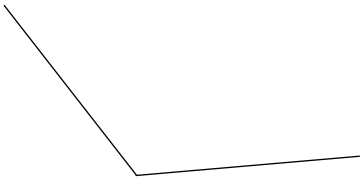
4. _____



2. _____



5. _____



3. _____

Name Date Period

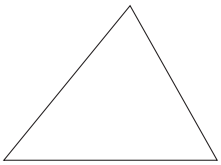
Polygons

EXAMPLE Count the number of sides. Name the polygon.

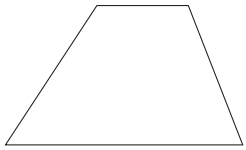
quadrilateral

Directions Count the number of sides for each polygon. Use the chart to classify each polygon.

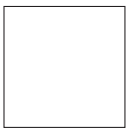
1.



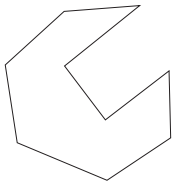
2.



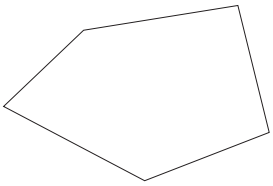
3.



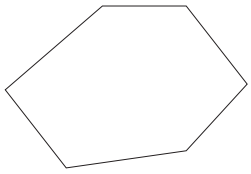
4.



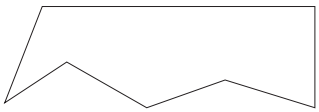
5.



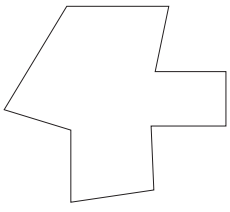
6.



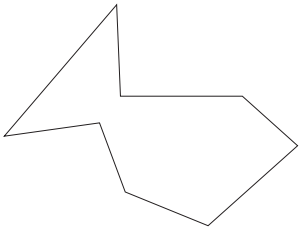
7.



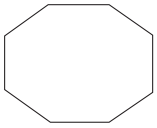
8.



9.



10.

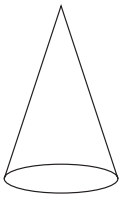


Number of Sides	Name of Polygon
3	triangle
4	quadrilateral
5	pentagon
6	hexagon
7	heptagon
8	octagon
9	nonagon
10	decagon
12	dodecagon

Name Date Period

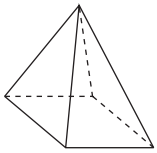
Solid Figures

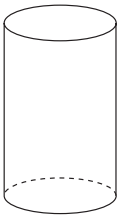
EXAMPLE Look at the solid figure. Identify it.

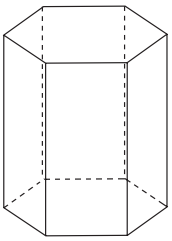


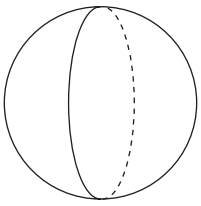
cone

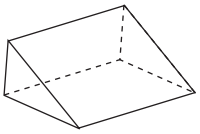
Directions Identify these solid figures.

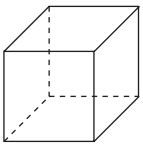
1. 

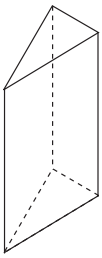
2. 

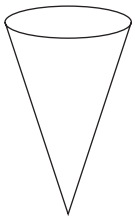
3. 

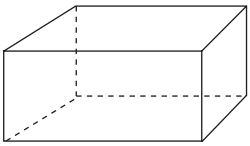
4. 

5. 

6. 

7. 

8. 

9. 

10.