



The Divisibility Rules

These rules let you test if one number is divisible by another, without having to do too much calculation!

A number is divisible		
<i>by</i>	<i>if</i>	<i>example</i>
2	The last digit is even (0,2,4,6,8)	12 8 is 12 9 is not
3	The sum of the digits is divisible by 3	381 (3+8+1=12, and 12÷3 = 4) Yes 217 (2+1+7=10, and 10÷3 = 3 1/3) No
4	The last 2 digits are divisible by 4	131 2 is (12÷4=3) 701 9 is not
5	The last digit is 0 or 5	17 5 is 80 9 is not
6	The number is divisible by both 2 <i>and</i> 3	114 (it is even, and 1+1+4=6 and 6÷3 = 2) Yes 308 (it is even, but 3+0+8=11 and 11÷3 = 3 2/3) No
7	If you double the last digit and subtract it from the rest of the number and the answer is: <ul style="list-style-type: none">• 0, or• divisible by 7 (Note: you can apply this rule to that answer again if you want)	672 (Double 2 is 4, 67-4=63, and 63÷7=9) Yes 905 (Double 5 is 10, 90-10=80, and 80÷7=11 3/7) No
8	The last three digits are divisible by 8	109 816 (816÷8=102) Yes 216 302 (302÷8=37 3/4) No
9	The sum of the digits is divisible by 9 (Note: you can apply this rule to that answer again if you want)	1629 (1+6+2+9=18, and again, 1+8=9) Yes 2013 (2+0+1+3=6) No
10	The number ends in 0	22 0 is 22 1 is not

<p>11</p>	<p>If you sum every second digit and then subtract all other digits and the answer is:</p> <ul style="list-style-type: none"> • 0, or • divisible by 11 	<p>1364 $((3+4) - (1+6) = 0)$ Yes 3729 $((7+9) - (3+2) = 11)$ Yes 25176 $((5+7) - (2+1+6) = 3)$ No</p>
<p>12</p>	<p>The number is divisible by both 3 <i>and</i> 4</p>	<p>648 $(6+4+8=18 \text{ and } 18 \div 3=6, \text{ also } 48 \div 4=12)$ Yes 916 $(9+1+6=16, 16 \div 3= 5 \frac{1}{3})$ No</p>