

# Divisibility Rules

## 1 - 12

Divisible by:	Condition	Example
1	No conditions. All integers are divisible by 1	$1 \mid 45 = 45$ $1 \mid 22 = 22$
2	If the last digit of the integer is even.	$2 \mid 56 = 28$ $2 \mid 102 = 51$
3	If the sum of the digit's numbers are divisible by 3.	$207$ ( $2+0+7 = 9$ ) $\rightarrow$ $3 \mid 207 = 69$
4	If the last 2 digits are divisible by 4	$1244$ ( $44/4 = 11$ ) $\rightarrow 4 \mid 1244 = 311$
5	If the last digit is either 0 or 5.	$5 \mid 100 = 20$ $901$ is not divisible by 5
6	If it is divisible by both 2 and 3. (For divisibility by 2 and 3, check rule 2 and 3)	$6 \mid 3312$ since: $2 \mid 3114$ (4 is even) $3 \mid 3114$ ( $3+1+1+4 = 9$ and 9 is divisible by 3).
7	If you double the last digit and subtract it from the rest of the number and the answer is: - 0, or - divisible by 7	$532$ (Double 2 is 4, $53-4=49$ , and $49 \div 7=7$ )
8	If the last three digits are divisible by 8.	$9816$
9	If the sum of the digits are divisible by 9	$5661$ ( $5+6+6+1 = 18$ and 18 is divisible by 9)

10	If the number ends in 0.	1000, 5000
11	<p>Add and subtract digits in an alternating pattern (add first, subtract second, add third, etc). Then the answer must be:</p> <ul style="list-style-type: none"> <li>- 0, or</li> <li>- divisible by 11</li> </ul>	<p>1364 (<math>1-3+6-4 = 0</math>)</p> <p>913 (<math>9-1+3 = 11</math>)</p>
12	If the number is both divisible by 3 and 4. (check divisibility rules for 3 and 4)	<p><math>12 \mid 1116 = 93</math></p> <p>for divisibility by 3 (<math>1+1+1+6 = 9</math> is divisible by 3)</p> <p>for divisibility by 4, the last two digits 1116 is divisible by 4)</p>