

÷ DIVISIBILITY TESTS

A divisibility test is a quick test you can use by looking at a number to see if it is divisible by a certain number, that is, if that number goes in to it evenly. For these tests, 0 is considered an even digit, even though, in general, we will not use the number 0 by itself.

The most important tests are for prime numbers, especially 2, 3, and 5.

The other tests are useful but are not essential.

Divisible by	The Test is	Example
2	The number is even	482 is even $482 \div 2 = 241$
3	The sum of the digits is divisible by 3	$342 \rightarrow 3 + 4 + 2 = 9$ 9 is divisible by 3 $342 \div 3 = 114$
4	If 2nd to last digit is even, and last digit is 0, 4, or 8 If 2nd to last digit is odd and last digit is 2 or 6	$176 \rightarrow$ 2nd to last is odd, ends in 6 $176 \div 4 = 44$
5	The number ends in 0 or 5	435 ends in 5 $435 \div 5 = 87$
6	The number is divisible by 2 <u>and</u> 3 (use <i>both</i> tests)	$312 \rightarrow 3 + 1 + 2 = 6$ and 312 is even $312 \div 6 = 52$
7	There is no test for 7, try dividing by 7	$455 \div 7 = 65$ so 455 is divisible by 7
8	If 3rd from last digit is even and last two digits divisible by 8 (or both 0) If 3rd from last digit is odd, last two digits divisible by 4 but <u>not</u> by 8	$752 \rightarrow$ 3rd from last is odd, 52 is divisible by 4, but not divisible by 8, $752 \div 8 = 94$
9	The sum of the digits is divisible by 9	$567 \rightarrow 5 + 6 + 7 = 18$ 18 is divisible by 9 $752 \div 9 = 63$
10	The number ends in 0	840 ends in 0 $840 \div 10 = 84$