Divisibility of Numbers

A number is **divisible** by another number if it divides evenly without remainder. For example, 18 is divisible by 3 because 18 ÷ 3 = 6 exactly.

2

A number is divisible by 2 if the ones digit is 0, 2, 4, 6, or 8. (A number that is divisible by 2 is an even number.)

Example: 234 is divisible by 2 because the ones digit is 4.

3

A number is divisible by 3 if the sum of its digits is a multiple of 3.

Example: 10 019 is *not* divisible by 3 because 1+0+0+1+9 = 11.
Example: 10 320 *is* divisible by 3 because 1+0+3+2+0 = 6.

4

A number is divisible by 4 if the last two digits form a number which is a multiple of 4.

Example: 10 314 is *not* divisible by 4 because 14 is not a multiple of 4.
Example: 20 232 *is* divisible by 4 because 32 is a multiple of 4.

5

A number is divisible by 5 if the ones digit is 0 or 5.

Example: 440 is divisible by 5 because the ones digit is 0.

6

A number is divisible by 6 if it is divisible by 2 and by 3.

Example: 87 416 is *not* divisible by 6 because 8+7+4+1+6 = 26, which is not a multiple of 3.
Example: 59 262 *is* divisible by 3 because 5+9+2+6+2 = 24, and the last digit is 2.

7

A number is divisible by 7 if, when you subtract twice the ones digit from the rest of the number, the result is divisible by 7. (Perform this test as often as necessary.)

Example: 1792 is divisible by 7: 2 × 2 = 4; 179 − 4 = 175. 5 × 2 = 10; 17 − 10 = 7.

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8 A number is divisible by 8 if the last three digits are a multiple of 8.

Example: 22 120 is divisible by 8 because 120 ÷ 8 = 15.

9 A number is divisible by 9 if the sum of its digits is a multiple of 9.

Example: 84615 is *not* divisible by 9 because 8+4+6+1+5 = 24.
Example: 62757 *is* divisible by 9 because 6+2+7+5+7 = 27.

10 A number is divisible by 10 if the ones digit is 0.

Example: 287 427 430 is divisible by 10 because the ones digit is 0.

EXERCISES

A. Are these divisible by **2**?
1) 1245 2) 230 3) 44 4) 84 756 918 621

B. Are these divisible by **3**?
1) 471 2) 10 104 3) 51 4) 4 206 038

C. Are these divisible by **4**?
1) 1468 2) 2319 3) 11 252 4) 238 348 975 648

D. Are these divisible by **5**?
1) 12 345 2) 54 321 3) 220 4) 550 050 505 051

E. Are these divisible by **6**?
1) 462 2) 156 3) 651 4) 111 111 111 111

F. Are these divisible by **7**?
1) 882 2) 369 3) 91 4) 119

G. Are these divisible by **8**?
1) 453 088 2) 1234 3) 999 136 4) 234 857 662 326

H. Are these divisible by **9**?
1) 3168 2) 1341 3) 4044 4) 3 497 851

I. Are these divisible by **10**?
1) 1234 2) 1010 3) 1015 4) 236 238 962 360

SOLUTIONS

A. no, yes, yes, no.
B. yes, yes, yes, no.
C. yes, no, yes, yes.
D. yes, no, yes, no.
E. yes, yes, no, no.
F. yes, no, yes, yes.
G. yes, no, yes, no.
H. yes, yes, no, no.
I. no, yes, no, yes.