Topic: Divisibility

Question: Which of the answer choices is divisible by this number?

3

Answer choices:

A 63

B 20

C 22

D 310

Solution: A

If the sum of the digits in a whole number is divisible by 3, then the number is divisible by 3 (and if the sum of the digits in a whole number isn't divisible by 3, then the number isn't divisible by 3). So let's find the sum of the digits in each of the answer choices and see which sum is divisible by 3.

Number	**Sum of digits**	**Sum divisible by 3?**
63	$6+3=9$	Yes, $9 \div 3 = 3$
20	$2+0=2$	No. When we divide 2 by 3, we get a remainder of 2.
22	$2+2=4$	No. When we divide 4 by 3, we get a remainder of 1.
310	$3+1+0=4$	No. When we divide 4 by 3, we get a remainder of 1.

Since 63 is the only answer choice whose digits sum to a number that's divisible by 3, we've found that 63 is the only answer choice that's divisible by 3.

If you didn't happen to know that "trick" about the sum of the digits being a multiple of 3, you could have just divided each of the answer choices by 3 directly.

$63 \div 3 = 21 +$ Remainder of 0

$20 \div 3 = 6 +$ Remainder of 2

$22 \div 3 = 7 +$ Remainder of 1

$310 \div 3 = 103 +$ Remainder of 1

Topic: Divisibility

Question: Which set of whole numbers divide evenly into both 25 and 100?

Answer choices:

A $1, 5, 25$

B $3, 10$

C $10, 2$

D $5, 2, 25$

Solution: A

Answer choice A is correct because both 25 and 100 are divisible by 1, 5, and 25.

From answer choice B, neither 25 nor 100 is divisible by 3, so this choice is incorrect.

From answer choice C, 25 is not divisible by 2, so this choice is incorrect.

From answer choice D, 25 is not divisible by 2, so this choice is incorrect.

Topic: Divisibility

Question: What is the divisibility rule for numbers that end in 0?

Answer choices:

A 10 will be a factor

B 0 will be a factor

C There will be exactly one factor

D All numbers are factors

Solution: A

All numbers that end in 0 will be divisible by 10. For example, 10, 20, 30, 40, 50, etc. are all evenly divisible by 10.