Topic: Ratios and proportions

Question: If there are 15 girls and 6 boys in a class, how many students (in total) are in the class?

Answer choices:

A 20

B 9

C 21

D None of these

Solution: C

If there are 15 girls and 6 boys in a class, the total number of students is

$$15 + 6$$

$$21$$

Topic: Ratios and proportions

Question: If there are 15 girls and 6 boys in a class, what is the ratio of boys to girls?

Answer choices:

A $\frac{21}{15}$

B $\frac{2}{5}$

C $\frac{15}{6}$

D $\frac{5}{2}$

Solution: B

There are 15 girls and 6 boys in a class. We're looking for the ratio of boys to girls, which means we'll need to find the fraction

$$\frac{\text{boys}}{\text{girls}}$$

So we get

$$\frac{6}{15}$$

We need to simplify the ratio to lowest terms.

$$\frac{3(2)}{3(5)}$$

$$\frac{2}{5}$$

Topic: Ratios and proportions

Question: If there are 15 girls and 6 boys in a class, then the ratio of boys to girls is $6/15$. If I want to keep this ratio, how many girls will there be in a class with 18 boys?

Answer choices:

A 30

B 15

C 60

D 45

Solution: D

The ratio of boys to girls is given as $6/15$. If instead we have a class of 18 boys and we want to keep the ratio of boys to girls at $6/15$, we'll let x be the unknown (the number of girls in a class where there are 18 boys) and set up the proportion

$$\frac{6}{15} = \frac{18}{x}$$

Then we'll solve this for x, by cross multiplying.

$$6x = 18(15)$$

Divide both sides by 6, and then factor the 18 in the numerator as $6(3)$, so that we can cancel a 6 out of the numerator and denominator.

$$x = \frac{18(15)}{6}$$

$$x = \frac{6(3)(15)}{6}$$

$$x = (3)(15)$$

$$x = 45$$