Topic: Ratio and proportion

Question: Solve for the variable.

$$\frac{3}{4} = \frac{x}{8}$$

Answer choices:

A $x = 6$

B $x = 4$

C $x = 10$

D $x = 2$

Solution: A

We'll first find the relationship between the denominators, and then we'll use that relationship to find the value of x.

The denominator on the right side is 8, and the denominator on the left side is 4. Since 8 is twice as big as 4, we know that x (the numerator on the right side) must be twice as big as 3 (the numerator on the left side).

$$x = 2(3)$$

$$x = 6$$

Alternatively, we can just cross multiply to get our answer.

$$\frac{3}{4} = \frac{x}{8}$$

$$8 \cdot 3 = 4 \cdot x$$

$$24 = 4x$$

$$\frac{24}{4} = \frac{4x}{4}$$

$$x = 6$$

Topic: Ratio and proportion

Question: Solve for the variable.

$$\frac{4}{m} = \frac{2}{7}$$

Answer choices:

A $m = 2$

B $m = 4$

C $m = 8$

D $m = 14$

Solution: D

We'll cross multiply.

$$\frac{4}{m} = \frac{2}{7}$$

$$7(4) = m(2)$$

$$28 = 2m$$

$$\frac{28}{2} = \frac{2m}{2}$$

$$m = 14$$

Topic: Ratio and proportion

Question: Solve for the variable.

$$\frac{x}{10} = \frac{3}{70}$$

Answer choices:

A $x = \frac{1}{7}$

B $x = \frac{10}{3}$

C $x = 70$

D $x = \frac{3}{7}$

Solution: D

We'll need to find the relationship between the constant denominators, so that we can use that relationship to find a value for x.

The denominator on the left is 10, and the denominator on the right is 70. Since 70 is seven times as big as 10, we know that 3 must be seven times as big as x.

$$7x = 3$$

$$x = \frac{3}{7}$$

Alternatively, we can just cross multiply to get our answer.

$$\frac{x}{10} = \frac{3}{70}$$

$$70 \cdot x = 3 \cdot 10$$

$$70x = 30$$

$$x = \frac{30}{70}$$

$$x = \frac{3}{7}$$