Topic: Complex fractions

Question: Simplify the expression.

$$\frac{\left(\frac{1}{2}\right)}{\left(\frac{1}{3}\right)}$$

Answer choices:

A $\dfrac{2}{3}$

B $\dfrac{3}{2}$

C $\dfrac{1}{5}$

D $\dfrac{2}{6}$

Solution: B

Instead of dividing by the fraction in the denominator, we can multiply by its reciprocal.

$$\frac{\left(\frac{1}{2}\right)}{\left(\frac{1}{3}\right)}$$

$$\frac{1}{2} \cdot \frac{3}{1}$$

$$\frac{1 \cdot 3}{2 \cdot 1}$$

$$\frac{3}{2}$$

Topic: Complex fractions

Question: Simplify the expression.

$$\frac{\left(\frac{x}{m}\right)}{d}$$

Answer choices:

A $\quad \dfrac{dx}{m}$

B $\quad \dfrac{x}{dm}$

C $\quad \dfrac{md}{x}$

D $\quad \dfrac{m}{dx}$

Solution: B

We have to rewrite the given fraction.

$$\frac{\left(\dfrac{x}{m}\right)}{d}$$

$$\frac{\left(\dfrac{x}{m}\right)}{\left(\dfrac{d}{1}\right)}$$

Now that we have a fraction divided by another fraction, instead of dividing by the fraction that was originally in the denominator, we can multiply by its reciprocal.

$$\frac{x}{m} \cdot \frac{1}{d}$$

$$\frac{1x}{dm}$$

$$\frac{x}{dm}$$

Topic: Complex fractions

Question: Simplify the expression.

$$\frac{\left(\dfrac{x}{a+b}\right)}{\left(\dfrac{m}{a+b}\right)}$$

Answer choices:

A $\dfrac{a}{b}$

B $\dfrac{m}{x}$

C x

D $\dfrac{x}{m}$

Solution: D

Instead of dividing by the fraction in the denominator, we can multiply by its reciprocal.

$$\frac{\left(\dfrac{x}{a+b}\right)}{\left(\dfrac{m}{a+b}\right)}$$

$$\frac{x}{a+b} \cdot \frac{a+b}{m}$$

$$\frac{x(a+b)}{m(a+b)}$$

$$\frac{x}{m}$$