Topic: Multiplying and dividing fractions

Question: Simplify the expression.

$$\frac{2}{21} \cdot \frac{3}{5}$$

Answer choices:

A $\quad \dfrac{2}{35}$

B $\quad \dfrac{5}{26}$

C $\quad \dfrac{6}{21}$

D $\quad \dfrac{15}{42}$

Solution: A

To multiply two fractions, we multiply their numerators to get the new numerator, and we multiply their denominators to get the new denominator.

$$\frac{2}{21} \cdot \frac{3}{5}$$

$$\frac{2 \cdot 3}{21 \cdot 5}$$

$$\frac{6}{105}$$

We always need to make sure that the resulting fraction is reduced to lowest terms.

$$\frac{6 \div 3}{105 \div 3}$$

$$\frac{2}{35}$$

Topic: Multiplying and dividing fractions

Question: Multiply the fractions.

$$\frac{3}{5} \cdot \frac{1}{2} \cdot \frac{5}{6}$$

Answer choices:

A $\dfrac{3}{5}$

B $\dfrac{2}{3}$

C $\dfrac{1}{2}$

D $\dfrac{1}{4}$

Solution: D

When we multiply fractions, we multiply their numerators to get the new numerator, and we multiply their denominators to get the new denominator.

$$\frac{3}{5} \cdot \frac{1}{2} \cdot \frac{5}{6}$$

$$\frac{3 \cdot 1 \cdot 5}{5 \cdot 2 \cdot 6}$$

$$\frac{15}{60}$$

Now reduce the fraction to its lowest terms.

$$\frac{15 \div 15}{60 \div 15}$$

$$\frac{1}{4}$$

Topic: Multiplying and dividing fractions

Question: Divide the fractions.

$$\frac{1}{2} \div \frac{1}{7}$$

Answer choices:

A $\dfrac{1}{14}$

B   6

C $\dfrac{7}{2}$

D $\dfrac{2}{7}$

Solution: C

When we divide fractions, we flip the second fraction upside down to create its reciprocal, and change the division to multiplication.

$$\frac{1}{2} \div \frac{1}{7}$$

$$\frac{1}{2} \times \frac{7}{1}$$

To then do the fraction multiplication, we multiply all the numerators together to create the new numerator, and multiply all the denominators together to create the new denominator.

$$\frac{1 \cdot 7}{2 \cdot 1}$$

$$\frac{7}{2}$$