Topic: Converting between fractions, decimals, and percents

Question: Find a mixed number that represents the expression.

3% **of** 80

Answer choices:

A $2\dfrac{1}{2}$

B $2\dfrac{2}{5}$

C $2\dfrac{3}{5}$

D $2\dfrac{1}{4}$

Solution: B

To find 3% of 80, we set it up as

$$\frac{3}{100} \cdot 80$$

$$\frac{3}{5} \cdot 4$$

$$\frac{12}{5}$$

5 goes into 12 two times, with a remainder of 2, so we can change the improper fraction to a mixed number and get

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

Topic: Converting between fractions, decimals, and percents

Question: Convert the fraction to a percent.

$$\frac{40}{80}$$

Answer choices:

A   75 %

B   80 %

C   20 %

D   50 %

Solution: D

First, since the fraction isn't already in lowest terms, we'll reduce it to lowest terms.

$$\frac{40}{80}$$

$$\frac{40 \div 40}{80 \div 40}$$

$$\frac{1}{2}$$

To convert this fraction to a percent, we can first convert to a decimal using long division, and then convert the decimal to a percent by moving the decimal place, or we can set up a proportion.

$$\frac{1}{2} = \frac{x}{100}$$

$$1 \cdot 100 = 2 \cdot x$$

$$100 = 2x$$

$$\frac{100}{2} = x$$

$$50 = x$$

So the fraction $40/80$ is equivalent to 50%.

Topic: Converting between fractions, decimals, and percents

Question: What percent of the students have brown hair?

$\dfrac{7}{12}$ of the 60 students have brown hair

Answer choices:

A $35\,\%$

B $58\dfrac{1}{3}\,\%$

C $57\,\%$

D $32\,\%$

Solution: B

First, we need to figure out what 7/12 of 60 is.

$$\frac{7}{12} \cdot 60$$

$$\frac{7}{1} \cdot 5$$

$$35$$

We can now say that 35 of the 60 students have brown hair, but we've been asked for the percentage of students with brown hair, so we need to convert

$$\frac{35}{60}$$

to a percent.

$$\frac{35}{60} = \frac{x}{100}$$

$$\frac{7}{12} = \frac{x}{100}$$

Cross multiplying, we get

$$12x = 700$$

$$x = \frac{700}{12}$$

$$x = \frac{175}{3}$$

$$x = 58\frac{1}{3}$$

So $7/12$ of 60 is equivalent to approximately 58.33%.