

Mon 10/29/18

Sec. 1.3 Percentages word problems

Formula  $\frac{\text{is}}{\text{of}} = \frac{\%}{100}$

ex1 what is 23% of 150?

$$\frac{\text{is}}{\text{of}} = \frac{\%}{100} \rightarrow \frac{x}{150} = \frac{23}{100} \rightarrow \text{*cross multiply*} \rightarrow \begin{aligned} 100x &= 23 \cdot 150 \\ 100x &= 3450 \\ x &= 3450/100 \\ x &= 34.5 \end{aligned}$$

ex2 432 is what percent of 1600?

$$\frac{\text{is}}{\text{of}} = \frac{\%}{100} \rightarrow \frac{432}{1600} = \frac{x}{100} \rightarrow \begin{aligned} (432)(100) &= 1600x \\ 43200 &= 1600x \\ 43200/1600 &= x \\ \boxed{27} &= x \end{aligned}$$

ex3 70 is 40% of what number?

$$\frac{\text{is}}{\text{of}} = \frac{\%}{100} \rightarrow \frac{70}{x} = \frac{40}{100} \rightarrow \begin{aligned} 70(100) &= 40x \\ 7000 &= 40x \\ \frac{7000}{40} &= x \\ \boxed{175} &= x \end{aligned}$$

Practice Problems on the board.

① 67.5 is 27% of what?

$$\frac{15}{08} = \frac{\%}{100} \rightarrow \frac{67.5}{x} = \frac{27}{100} \rightarrow (100)(67.5) = x27$$
$$6750 = 27x$$
$$\frac{6750}{27} = x$$
$$250 = x$$

② 6% of 300 is what number?

$$\frac{15}{08} = \frac{\%}{100} \rightarrow \frac{x}{300} = \frac{6}{100} \rightarrow 6(300) = 100x$$
$$1800 = 100x$$
$$\frac{1800}{100} = x$$
$$18 = x$$

3) 32 is 40% of what number?

$$\frac{32}{x} = \frac{40}{100}$$
$$32(100) = 40x$$
$$3200 = 40x$$
$$3200/40 = x$$
$$80 = x$$

④ 459 is what % of 340?

$$\frac{459}{340} = \frac{x}{100}$$
$$100(459) = 340x$$
$$45900 = 340x$$
$$\frac{45900}{340} = x$$
$$135 = x$$

5) 30% of 45?

$$\frac{x}{45} = \frac{30}{100}$$
$$45(30) = 100x$$
$$\frac{1350}{100} = \frac{100x}{100}$$
$$13.5 = x$$

⑥ 12 is  $\frac{1}{2}\%$  of what number?

$$\frac{12}{x} = \frac{.5}{100}$$

$$12(100) = .5x$$

$$1200 = .5x$$

$$1200/.5 = x$$

$$2400 = x$$