

March 5, 2015 ^{1st} _{2nd}

Starter

For breakfast, Mr. Yolk has eggs that have been boiled for exactly 9 minutes. He has two timers (the type with sand in them) - one that runs for 4 minutes and one that runs for 7 minutes. How does he use these two timers to perfectly time his eggs?



3/5 - Solving Percent Equations using Proportions

*"Percent" means...
out of 100*

You set up percent equations using proportions!

$$\frac{\text{score}}{\text{total}} = \frac{\%}{100}$$

If you got 22 out of 25 on a quiz, what percent is that?

$$\frac{22 \cdot 4}{25 \cdot 4} = \frac{\boxed{88}}{100} = 88\%$$

**Use scale factors. if possible, to make it easier.*

Circle what you would consider the total; underline what you would consider your score.

45 is what percent of 50?

75 is 38% of what number?

What is 85% of 46?

What other situations could be used to describe the sentence? Discuss your ideas with your partner.

profits
pollution
elevation

gas prices

Solve each by setting up proportions and solving.

What number is 75% of 60? 40 out of 56 is what percent?

$$\begin{aligned}
 100 \cdot \frac{n}{60} &= \frac{75}{100} \cdot 60 \\
 100 \cdot \frac{60}{60} &= \frac{75}{100} \cdot 60 \\
 \text{cross-multiply} \\
 100n &= 4500 \\
 \frac{100n}{100} &= \frac{4500}{100} \\
 n &= 45
 \end{aligned}$$

$$\begin{aligned}
 \frac{40}{56} &= \frac{P}{100} \\
 56P &= 4000 \\
 \frac{56P}{56} &= \frac{4000}{56} \\
 P &= 71.4\%
 \end{aligned}$$

$$4000 \div 56 = 71.428571$$

120 is 25% of what number?

$$\begin{aligned}
 \frac{120}{n} &= \frac{25}{100} \\
 25n &= 12000 \\
 \frac{25n}{25} &= \frac{12000}{25} \\
 n &= 480
 \end{aligned}$$

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

45 is what percent of 180?

$$\begin{aligned}
 \frac{45}{180} &= \frac{P}{100} \\
 180 \cdot 25 &= P \cdot 100 \\
 4 &= P
 \end{aligned}$$

$$25\% = P$$

$$\begin{aligned}
 \frac{45}{180} &= \frac{P}{100} \\
 180P &= 4500 \\
 \frac{180P}{180} &= \frac{4500}{180} \\
 P &= 25\%
 \end{aligned}$$

Solve each by setting up proportions and solving.

97 is 62% of what number?

$$\frac{97}{n} = \frac{62}{100}$$
$$\frac{62n}{62} = \frac{9700}{62}$$
$$n = 156.5$$

$9700 \div 62 = 156.451613$

84 is what percent of 86?

$$\frac{84}{86} = \frac{p}{100}$$
$$\frac{86p}{86} = \frac{8400}{86}$$
$$p = 97.7\%$$

$8400 \div 86 = 97.674419$

27 out of 56 is what percent?

$$\frac{27}{56} = \frac{p}{100}$$

What number is 4% of 110?

$$\frac{n}{110} = \frac{4}{100}$$

Homework
Blue WS2

Due Monday