

Lesson 6.4:

The Percent Equation

Essential Question

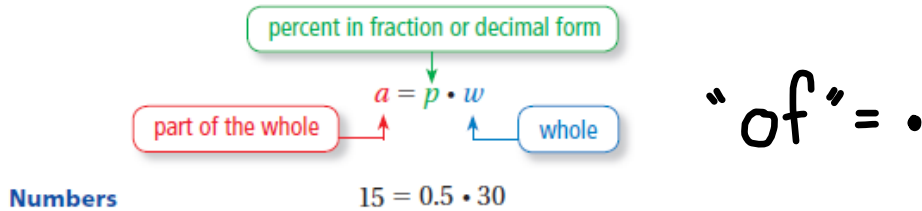
How can you use an equivalent form of the percent proportion to solve a percent problem?

6.4 Notes

Get out your spiral notebook and calculator too!

 **Key Idea**
The Percent Equation

Words To represent “ a is p percent of w ,” use an equation.



“of” = •

Example 1:

What number is 24% of 50?

? = 24% • 50

$$X = 0.24 \cdot 50$$

$$X = \boxed{12}$$

Does our answer make sense?

12 is 24% of 50 YES

(24% is about 1/4)

Example 2:

9.5 is what percent of 25?

= ? .

$$\begin{array}{r|l} 9.5 = x \cdot 25 & \\ \div 25 & \div 25 \\ \hline 0.38 = x & \end{array}$$

38%

*Does our answer make sense?*9.5 is 38% of 25 YES
(38% is less than 1/2)**Example 3:**

39 is 52% of what number?

= ? .

$$\begin{array}{r|l} 39 = 0.52 \cdot x & \\ \div 0.52 & \div 0.52 \\ \hline 75 = x & \end{array}$$

*Does our answer make sense?*39 is 52% of 75 YES
(52% is about 1/2)

Write and solve an equation to answer the question.

1. What number is 150% of 40?
 $? = 1.5 \cdot 40$
 $x = 1.5 \cdot 40$
 $x = \boxed{60}$
 Does our answer make sense?
 60 is 150% of 40 YES
 (150% is 1 1/2)

2. 3 is what percent of 600?
 $3 = x \cdot 600$
 $\div 600 \quad \div 600$
 $x = 0.005$
 $\boxed{0.5\%}$
 Does our answer make sense?
 3 is 0.5% of 600 YES
 (0.5% is a very small proportion)

3. 90 is 18% of what number?
 $90 = 0.18 \cdot x$
 $\div 0.18 \quad \div 0.18$
 $\boxed{500} = x$
 Does our answer make sense?
 90 is 18% of 500 YES
 (18% is less than 1/4)

Example 4:

a. Find the percent of sales tax on the food total.

1.65 is what percent of 27.50?

$$1.65 = x \cdot 27.50$$

$$\div 27.50 \quad \div 27.50$$

$$0.06 = x \quad \boxed{6\%}$$

Does our answer make sense?
 YES, sales tax is generally <10%

8th Street Cafe	
DATE:	MAY04'13 05:45PM
TABLE:	29
SERVER:	JANE
Food Total	27.50
Tax	1.65
Subtotal	29.15
TIP:	_____
TOTAL:	_____
Thank You	

b. Find the amount of a 16% tip on the food total.

16% of 29.15

$$0.16 \cdot 29.15 = 4.664 \rightarrow \boxed{\$4.66}$$

4. Find the amount of a 20% tip on the food total.

$$0.20 \cdot 29.15 = 5.83$$

\$5.83