

Key

NAME

DATE

PERIOD

13 + 4
EL 1

Unit 6, Lesson 7: Revisit Percentages

1. A crew has paved $\frac{3}{4}$ of a mile of road. If they have completed 50% of the work, how long is the road they are paving?

$1\frac{1}{2}$ mi $.5x = \frac{3}{4}$ or $\frac{1}{2}x = \frac{3}{4}$ so have to either divide by $\frac{1}{2}$ or multiply by 2.

2. 40% of x is 35.

a. Write an equation that shows the relationship of 40%, x , and 35.

$.4x = 35$
OR
 $\frac{4}{10}x = 35$
 $\frac{2}{5}x = 35$

b. Use your equation to find x . Show your reasoning.

$35 \div .4 = 87.5$
 $35 \div \frac{4}{10}$
 $\frac{35}{1} \times \frac{10}{4} = \frac{350}{4} = 87\frac{2}{4} = 87\frac{1}{2}$
 $35 \div \frac{2}{5} = 87\frac{1}{2}$
 $35 \times \frac{5}{2} = 87\frac{1}{2}$

3. Priya has completed 9 exam questions. This is 60% of the questions on the exam.

a. Write an equation representing this situation. Explain the meaning of any variables you use.

$6x = 9$ → done
percent of total ↑ total questions
 $\frac{6}{10}x = 9$ or $\frac{3}{5}x = 9$

b. How many questions are on the exam? Show your reasoning.

divides $\frac{9}{.6} = 15$ questions
OR
 $9 \div \frac{6}{10} \rightarrow \frac{9}{1} \times \frac{10}{6} = \frac{90}{6} = 15$
 $9 \div \frac{3}{5} \rightarrow \frac{9}{1} \times \frac{5}{3} = \frac{45}{3} = 15$

4. Answer each question. Show your reasoning.

a. 20% of a is 11. What is a ?

$.2a = 11$ $\frac{11}{.2} = 55$
 $\frac{2}{10}a = 11$ $11 \div \frac{2}{10}$
 $\frac{11}{1} \cdot \frac{10}{2} = 55$

b. 75% of b is 12. What is b ?

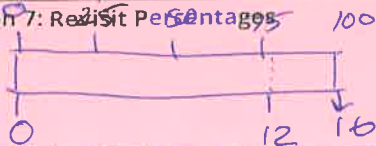
$.75b = 12$ $\frac{12}{.75} = 16$
 $\frac{3}{4}b = 12$ $\frac{12}{1} \cdot \frac{4}{3} = \frac{48}{3} = 16$
OR think

c. 80% of c is 20. What is c ?

$.8c = 20$ $20 \div .8 = 25$
 $\frac{8}{10}c = 20$ $20 \div \frac{8}{10}$ $\frac{20}{1} \cdot \frac{10}{8} = \frac{200}{8} = 25$
 $\frac{4}{5}c = 20$ $20 \div \frac{4}{5}$ $\frac{20}{1} \cdot \frac{5}{4} = \frac{100}{4} = 25$

d. 200% of d is 18. What is d ?

$2d = 18$ $d = 9$



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5. For the equation $2n - 3 = 7$

a. What is the variable?

n

b. What is the coefficient of the variable?

2 means I have 2 of the variable

c. Which of these is the solution to the equation? 2, 3, 5, 7, n

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(from Unit 6, Lesson 2)

$$2n - 3 = 7$$

$$n = 5$$

has to be 10

6. Which of these is a solution to the equation $\frac{1}{8} = \frac{2}{5} \cdot x$?

$$\frac{2}{5}x = \frac{1}{8}$$

$$\frac{1}{8} \div \frac{2}{5}$$

$$\frac{1}{8} \cdot \frac{5}{2} = \frac{5}{16}$$

- A. $\frac{2}{40}$
- B. $\frac{5}{16}$
- C. $\frac{11}{40}$
- D. $\frac{17}{40}$

(from Unit 6, Lesson 2)

Challenge

7. Find the quotients.

a. $0.009 \div 0.001$

9

b. $0.009 \div 0.002$

4.5

c. $0.0045 \div 0.001$

4.5

d. $0.0045 \div 0.002$

2.25

divisor doubled so quotient needs to be cut in half

divisor doubles so quotient needs to be cut in half

+ 4

(from Unit 5, Lesson 13)