

NAME

DATE

PERIOD

Unit 5, Lesson 15: Solving Equations with Rational Numbers

1. Solve.

a. $\frac{2}{5}t = 6$

b. $-4.5 = a - 8$

c. $\frac{1}{2} + p = -3$

d. $12 = x \cdot 3$

e. $-12 = -3y$

2. Evaluate each expression if x is $\frac{2}{5}$, y is -4 , and z is -0.2 .

a. $x + y$

b. $2x - z$

c. $x + y + z$

d. $y \cdot x$

(from Unit 5, Lesson 13)

3. Match each equation to a step that will help solve the equation.

NAME _____

DATE _____

PERIOD _____

A. $5x = 0.4$

1. Multiply each side by 5.

B. $\frac{x}{5} = 8$

2. Multiply each side by -5.

C. $3 = \frac{-x}{5}$

 3. Multiply each side by $\frac{1}{5}$.

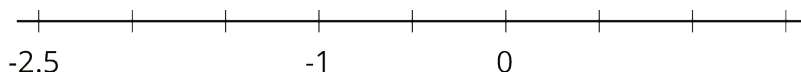
D. $7 = -5x$

 4. Multiply each side by $\frac{-1}{5}$.

4. a. Write an equation where a number is added to a variable, and a solution is -8.

 b. Write an equation where a number is multiplied by a variable, and a solution is $\frac{-4}{5}$.

5. The markings on the number line are evenly spaced. Label the other markings on the number line.



(from Unit 5, Lesson 8)

6. In 2012, James Cameron descended to the bottom of Challenger Deep in the Marianas Trench; the deepest point in the ocean. The vessel he rode in was called DeepSea Challenger.

Challenger Deep is 35,814 feet deep at its lowest point

a. DeepSea Challenger's descent was a change in depth of (-4) feet per second. We can use the equation $y = -4x$ to model this relationship, where y is the depth and x is the time in seconds that have passed. How many seconds does this model suggest it would take for DeepSea Challenger to reach the bottom?

b. To end the mission DeepSea Challenger made a one-hour ascent to the surface. How many seconds is this?

c. The ascent can be modeled by a different proportional relationship $y = kx$. What is the value of k in this case?

NAME

DATE

PERIOD

(from Unit 5, Lesson 12)