

### Chapter 3 Test Study Guide

Solve each equation. Identify whether each equation has one solution, no solution, or infinite solutions. Show your work.

1.  $2x - 0.2(4 - x) = 2.8 \rightarrow 2x - .8 + .2x = 2.8$

$$x = \frac{18}{11} (1.\overline{03})$$

one solution

6.  $2x - \frac{1}{4} = -\frac{1}{8}(16x - 2)$

$$2x - \frac{1}{4} = -2x + \frac{1}{4}$$

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

one solution

7.  $0.5(6x - 3) = \frac{1}{2}(6 + 6x)$

$$3x - 1.5 = 3 + 3x$$

$$\begin{array}{r} -3x \\ \hline -1.5 \neq 3 \end{array}$$

no solution

no solution

8.  $\frac{1}{5}(x - 5) = \frac{1}{5}x - 1$

$$\frac{1}{5}x - 1 = \frac{1}{5}x - 1$$

infinite solutions

Find  $y$  when  $x = 6$

9.  $0.75y = \frac{1}{4}(x - 3)$

$$.75y = \frac{1}{4}(6 - 3)$$

$$.75y = \frac{1}{4}(3)$$

$$.75y = \frac{3}{4}$$

$$\frac{.75y}{.75} = \frac{.75}{.75}$$

$$y = 1$$

10.  $\frac{2}{3}x - 1 = 2(y + 7)$

$$\frac{2}{3}(6) - 1 = 2(y + 7)$$

$$4 - 1 = 2y + 14$$

$$3 = 2y + 14$$

$$-11 = 2y$$

$$-\frac{11}{2} = y$$

15. A private swimming club charges \$2.50 per swimmer for the first hour. After the first hour, swimmers have to pay an additional \$1.50 for each half hour, or part of a half hour thereafter. Georgina and her friend swam in the pool for  $x$  hours.

- a) Write an equation for the total charge,  $y$  dollars, in terms of the number of hours,  $x$ , that Georgina swam in the pool.

$$y = 2.50 + 1.50x$$

- b) Find the total charges if Georgina and her friend each swam in the pool for 2 hours.

$$y = 2.50 + 1.5(2)$$

$$y = 5.5$$

\$5.50 for 2 hours  
in the pool

16. For a weekly car rental, a car-rental company charges customers a flat fee of \$100 plus 10 cents for every mile traveled.

- a) Write an equation for the amount,  $A$  dollars, of a weekly rental for a car that travels  $m$  miles.

$$A = 100 + .10m$$

- b) How many miles were driven if the rental cost was \$250?

$$250 = 100 + .10m$$

$$150 = .10m$$

$$1500 = m$$

1500 miles were driven if the  
cost was \$250