

Name: \_\_\_\_\_  
Date: \_\_\_\_\_  
Class: \_\_\_\_\_

Algebra  
Unit 2  
HW 2-2

1) Is  $x = 9$  a solution to the equation  $2x - 4 = 14$

$$2(9) - 4 \stackrel{?}{=} 14$$

$$18 - 4 = 14$$

$$14 = 14 \checkmark$$

yes

2) Is  $x = 3$  a solution to the equation  $2(x + 9) - 3(x + 2) = 9$ ?

$$2(3+9) - 3(3+2) \stackrel{?}{=} 9$$

$$2(12) - 3(5) = 9$$

$$24 - 15 = 9$$

$$9 = 9 \checkmark$$

yes

3) Is  $x = 6$  a solution to the equation  $\frac{4-x}{x-1} = \frac{1}{2}$ ?

$$\frac{4-6}{6-1} \stackrel{?}{=} \frac{1}{2}$$

$$-\frac{2}{5} = \frac{1}{2} \times$$

No

4) Solve:  $3 - 2(x + 6) = -23$

$$3 - 2x - 12 = -23$$

$$-2x - 9 = -23$$

$$+9 \quad +9$$

$$\frac{-2x}{-2} = \frac{-14}{-2}$$

$$\boxed{x = 7}$$

5) Solve:  $4x - 2(3 - 8x) = 34$

$$4x - 6 + 16x = 34$$

$$20x - 6 = 34$$

$$+6 \quad +6$$

$$\frac{20x}{20} = \frac{40}{20}$$

$$\boxed{x = 2}$$

6) You are saving money for a car that costs \$5000. You have \$1000 saved and will save \$250 per month until you have enough money. You use the following equation to determine how long it will take you to save the money:  $250m + 1000 = 5000$ . Figure out how many months it will take you to save the \$5000.

$$\begin{array}{r} 250m + 1000 = 5000 \\ -1000 \quad -1000 \\ \hline 250m = 4000 \\ \frac{250m}{250} = \frac{4000}{250} \end{array}$$

$$m = 16$$

16 months

7) Bacteria is multiplying at a rate of 4% per hour and there is currently 12% in the petri dish. A scientist is conducting an experiment to see how many hours it will take to get the petri dish 72% full. Use the equation  $4h + 12 = 72$  (h is the number of hours it has been) to determine how many bacteria are in the dish. After 10 hours will there be 72% in the dish?

$$4(10) + 12 = 72$$

$$40 + 12 = 72$$

$$52 = 72 \quad \times$$

No