

Name: Favorite Mistake Hour: \_\_\_\_\_ Student #: \_\_\_\_\_

Concept: 7-3 Self-Assess: \_\_\_\_\_ Score: \_\_\_\_\_

Concept: 8-2 Self-Assess: \_\_\_\_\_ Score: \_\_\_\_\_

Concept: 9-1 Self-Assess: \_\_\_\_\_ Score: \_\_\_\_\_

### Concept #7 – Writing and Solving Equations

Solve the equations below. Show all work for full credit.

1.  $6x + 2 = -10$

$$\begin{aligned} +2 &= +2 \\ \frac{6x}{6} &= \frac{-8}{6} \\ x &= -\frac{4}{3} \end{aligned}$$

2.  $18 - 3c = 6$

$$\begin{aligned} -18 & \quad -18 \\ \frac{3c}{3} &= \frac{-12}{3} \\ c &= -4 \end{aligned}$$

3.  $4(2m - 5) = 4$

$$\begin{aligned} -4 & \quad -4 \\ 2m - 5 &= 0 \\ +5 & \quad +5 \\ \frac{2m}{2} &= \frac{5}{2} \\ m &= 2.5 \end{aligned}$$

4.  $-2(5a + 1) = 28$

$$\begin{aligned} -10a + 1 &= 28 \\ -10a &= 27 \\ \frac{-10a}{-10} &= \frac{27}{-10} \\ a &= -2.7 \end{aligned}$$

5. A water tank contains 600 gallons of water but it is leaking 15 gallons of water each minute. Write and solve an equation to find how many minutes it will take for the water tank to have 405 gallons of water remaining.

$$\begin{aligned} -600 + 15g &= 405 \\ -600 & \quad -600 \\ 15g &= -195 \\ \frac{15g}{15} &= \frac{-195}{15} \\ g &= -13 \end{aligned}$$

13 gallons

## Concept #9 – Inequalities

Solve each of the inequalities below. Be sure to show your work.

1.  $8x - 7 > 9$

$$8x \overset{+7}{=} \overset{+7}{16}$$

$$x = 2$$

2.  $24 \leq -6(x + 3)$

$$24 \leq \underset{-18}{-6x} + \overset{-18}{18}$$

$$\frac{6}{-6} \leq \frac{-6x}{-6}$$

$$-1 \geq x$$

3.  $2(4x + 3) + x < -30$

$$8x + \underset{-6}{6} < \underset{-6}{-30}$$

$$\frac{8x}{8} < \frac{-24}{8}$$

$$x < -3$$

4.  $-3(5x - 2) + 8 \leq 44$

$$-15x + 6 + 8 \leq 44$$

$$-15x + \underset{-14}{14} \leq \underset{-14}{44}$$

$$\frac{-15x}{-15} \leq \frac{30}{-15}$$

$$x \leq -2$$