

## Chapter 1 TEST REVIEW

Period \_\_\_\_\_

**Simplify each expression.**

1)  $-10 + 3(4n - 4)$

2)  $-\frac{7}{3}\left(-\frac{5}{3}m + 2\right)$

**Solve each equation. Show all work.**

3)  $1 - 3p - 8 = 11$

4)  $-(x - 1) = 7x - 3(-2x - 5)$

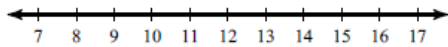
**Solve each proportion. Show all work.**

5)  $\frac{3}{8} = \frac{m}{6}$

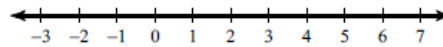
6)  $\frac{r-3}{5} = \frac{r+7}{8}$

Solve each inequality. Graph its solution. Write the interval notation.

7)  $2p - 2p > 0$



8)  $-3(3n + 3) \geq -2(-n - 1)$



Given the following inequality, Graph the inequality and write the interval notation. (2 pts each)

9)  $x \leq 1$  or  $x > 3$

10)  $-1 \leq x < 5$

Given the following interval notation, Graph the inequality and write the inequality. (2 pts each)

11)  $(-\infty, 3] \cup (7, \infty)$

12)  $(-4, -1]$

## Chapter 1 TEST REVIEW

Simplify each expression.

$$1) -10 + 3(4n - 4)$$

$$-10 + 12n - 12$$

$$-22 + 12n$$

Distribute

Combine like terms

$$2) -\frac{7}{3}\left(-\frac{5}{3}m + 2\right)$$

Distribute

$$\frac{35}{9}m - \frac{14}{3}$$

Solve each equation. Show all work.

$$3) 1 - 3p - 8 = 11$$

Combine like terms

$$-7 - 3p = 11$$

$$+7 \quad +7$$

Add 7 to both sides

$$\frac{-3p}{-3} = \frac{18}{-3}$$

Divide -3 to both sides

$$p = -6$$

$$4) -(x - 1) = 7x - 3(-2x - 5)$$

Distribute

$$-x + 1 = 7x + 6x + 15$$

Combine like terms

$$-x + 1 = 13x + 15$$

$$+x \quad +x$$

Add x to both sides

$$1 = 14x + 15$$

$$-15 \quad -15$$

subtract 15 to both sides

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

divide 14 to both sides

$$-1 = x$$

Solve each proportion. Show all work.

$$5) \frac{3}{8} = \frac{m}{6}$$

$$(6) \left(\frac{3}{8}\right) = \left(\frac{m}{6}\right) (6)$$

multiple 6 to both sides

$$\frac{9}{4} = m$$

$$6) \frac{r-3}{5} = \frac{r+7}{8}$$

Cross multiply

$$8(r - 3) = 5(r + 7)$$

distribute

$$8r - 24 = 5r + 35$$

Subtract 5r to both sides

$$-5r \quad -5r$$

$$3r - 24 = 35$$

$$+24 \quad +24$$

add 24 to both sides

divide 3 to both sides

$$\frac{3r}{3} = \frac{59}{3}$$

$$r = \frac{59}{3}$$

Solve each inequality. Graph its solution. Write the interval notation.

$$7) 2p - 2p > 0$$
$$0 > 0$$

Combine like terms

This is FALSE, so "No solution"

$$8) -3(3n + 3) \geq -2(-n - 1)$$
$$-9n - 9 \geq 2n + 2$$
$$-2n \quad -2n$$

distribute

Subtract 2n to both sides

$$-11n - 9 \geq 2$$
$$+9 \quad +9$$

add 9 to both sides

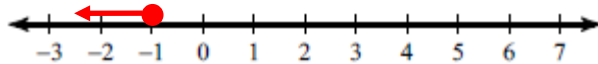
$$\frac{-11n}{-11} \geq \frac{11}{-11}$$

divide -11 to both sides

$$n \leq -1$$

Rule: divide by negative,  
flip inequality sign

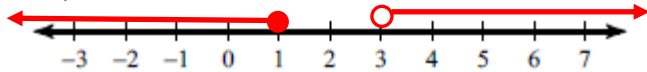
Graph:



Interval notation:  $(-\infty, -1]$

9) Given:  $x \leq 1$  or  $x > 3$

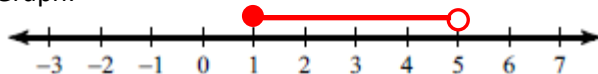
Graph:



Interval notation:  $(-\infty, 1] \cup (3, \infty)$

10) Given:  $-1 \leq x < 5$

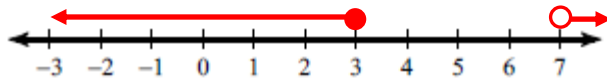
Graph:



Interval notation:  $[-1, 5)$

11) Given:  $(-\infty, 3] \cup (7, \infty)$

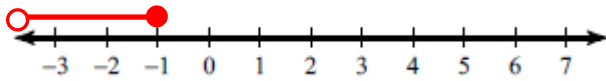
Graph:



inequality:  $x \leq 3$  or  $x > 7$

12) Given:  $(-4, -1]$

Graph:



inequality:  $-4 < x \leq -1$