

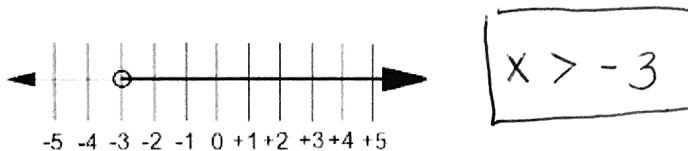
Name \_\_\_\_\_

Date \_\_\_\_\_

UNIT 7 REVIEW SHEET

Key

1. Write an inequality that represents the solution set shown by the graph



2. Which value of  $x$  is a solution to the inequality  $2x - 12 < -4$ ?

a. 4

b. -4

c. 8

d. 5

$$2x - 12 < -4$$

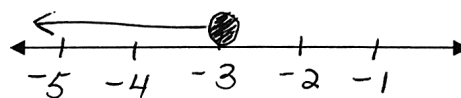
$$2x < 8$$

$$x < 4$$

3. Given  $t - 3 > -5$ , what step can be used to obtain the equivalent inequality  $t > -2$ ?

add 3 to both sides

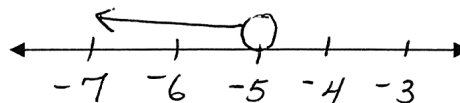
4. Graph the inequality  $-3 \geq y$  on the number line.



5. Solve the inequality  $\frac{4p}{-4} > \frac{20}{-4}$  and graph

$$\frac{4p}{-4} > \frac{20}{-4}$$

$$p < -5$$



a. What is one possible value of  $p$ ?

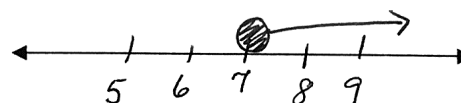
-6

b. What is not a possible value of  $p$ ?

-5

6. Graph the solution to  $7 \leq a$  on the number line.

$$a \geq 7$$



7. Translate into an inequality: the price of a meal,  $m$ , is at least \$22.50  $m \geq 22.50$

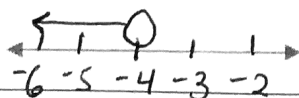
8. Translate: the weight of a person,  $w$ , cannot exceed 200 lbs for a certain ride at the carnival.  $w \leq 200$

9. Translate: the minimum cost,  $c$ , of a shirt at a store is \$22.  $c \geq 22$

Solve each inequality and graph the solution set on the number line.

9.  $\frac{4y}{4} < \frac{-16}{4}$

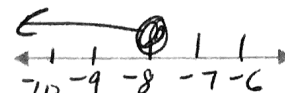
$$y < -4$$



10.  $-2x - 6 \geq 10$

$$-2x \geq 16$$

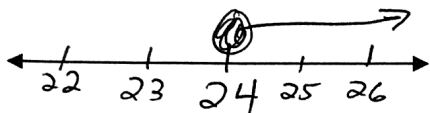
$$x \leq -8$$



$$11. -\frac{1}{4}d + 4 \leq -2$$

$$\left(\frac{-4}{1}\right) - \frac{1}{4}d \leq -6 \left(\frac{-4}{1}\right)$$

$$\boxed{d \geq 24}$$

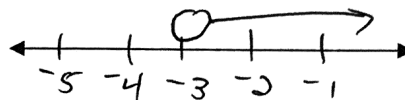


$$12. -8 < 2y - 2$$

$$\begin{array}{r} + 2 \quad + 2 \\ \hline -6 < \frac{2y}{2} \end{array}$$

$$-3 < y$$

$$\boxed{y > -3}$$

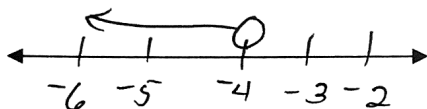


$$13. 4x + 18 - x < 6$$

$$\begin{array}{r} 3x + 18 < 6 \\ -18 \quad -18 \\ \hline 3x < -12 \end{array}$$

$$\frac{3x}{3} < \frac{-12}{3}$$

$$\boxed{x < -4}$$

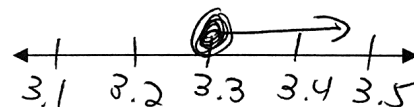


$$14. 6x - 7 \geq -4x + 26$$

$$\begin{array}{r} +4x \quad +4x \\ \hline 10x - 7 \geq 26 \end{array}$$

$$\frac{10x}{10} \geq \frac{33}{10}$$

$$\boxed{x \geq 3.3}$$



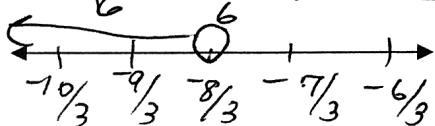
$$15. 3 - (2x - 5) > 4x + 24$$

$$3 - 2x + 5 > 4x + 24$$

$$\begin{array}{r} -2x + 8 > 4x + 24 \\ +2x \quad +2x \\ \hline 8 > 6x + 24 \end{array}$$

$$\begin{array}{r} 8 > 6x + 24 \\ -24 \quad -24 \\ \hline -16 > 6x \end{array}$$

$$\frac{6x}{6} < \frac{-16}{6} \quad \boxed{x < -\frac{8}{3}}$$

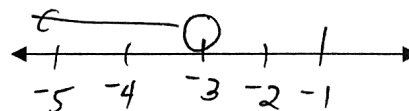


$$16. -15 > 3y - 6$$

$$\begin{array}{r} +6 \quad +6 \\ \hline -9 > \frac{3y}{3} \end{array}$$

$$-3 > y$$

$$\boxed{y < -3}$$



17. What is the **largest possible integer** in the solution set to the following inequality?

$$-2x \geq -10$$

$$\frac{-2x}{-2} \geq \frac{-10}{-2}$$

$$\boxed{x \leq 5.5}$$

The largest integer possible is 5.

For each problem below, (a) define your variable, (b) write the inequality, (c) solve the inequality, and (d) answer the question.

18. Ten less than the product of seven and a number is at most 38. What is the largest integer  $p$  could represent?

$$p = \text{a \#}$$

$$7p - 10 \leq 38$$

$$7p \leq 48$$

$$p \leq 48/7$$

or

$$p \leq 6.857\dots$$

The largest possible integer is 6

19. A cell phone plan charges \$55 a month, plus \$0.15 per text message. Write an inequality that can be solved to find out how many text messages can be sent while still keeping the monthly bill under \$100.

$$x = \text{\# of text msgs}$$

$$0.15x + 55 < 100$$

$$0.15x < 45$$

$$x < 300$$

299 messages can be sent

20. The sum of three consecutive integers is greater than 123. What are the smallest values for the three integers?

41

42

43

$$x = \text{1st con int.}$$

$$x+1 = \text{2nd " "}$$

$$x+2 = \text{3rd " "}$$

$$x + x + 1 + x + 2 > 123$$

$$3x + 3 > 123$$

$$3x > 120$$

$$x > 40$$