

Unit 3 Practice Test

Name: _____

Date: _____ Period: _____

Determine which of the given answers are solutions:

1) $x > -2$

a. -10

b. -2

2) $-3x - 2 \geq 10$

a. -10

b. -8

c. 0

d. 3

c. -4

d. 3

Define a variable and write an Inequality:

3) A bus can hold at most 28 students.

Let ____ = _____

Inequality: _____

4) You must be at least 15 to obtain a learner's permit.

Let $\underline{\quad} = \underline{\hspace{2cm}}$

Inequality: _____

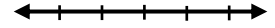
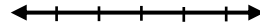
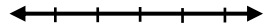
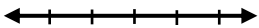
Solve for x and graph each solution:

5) $x - 5 \leq 2$

6) $-6 < x + 4$

$$7) \quad \frac{x}{8} > -3$$

$$8) \quad -\frac{2}{5}x > 6$$

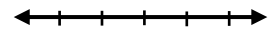
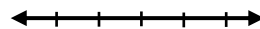
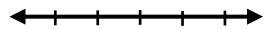
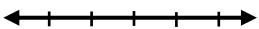


9) $-3x + 5 < -16$

10) $2(x - 4) \leq -6$

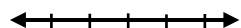
11) $4 - 2x \leq 5 - x + 1$

12) $5x - 2(x - 15) > 10 - x$

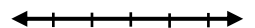


Write an inequality for each word problem, then solve and graph the solutions:

13) Seven less than six times a number is **more than** seventeen. Solve and graph.



14) Seven more than a number is **at most** one less than three times the number. Solve and graph.



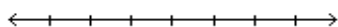
15) The perimeter of a rectangle is **at least** 24 inches. The length is 2 inches longer than the width. Find the largest width and length possible. (Hint: Draw a rectangle.)

16) Find the largest three consecutive integers whose sum is **at most** 24. Solve.

Writing and Solving Compound Inequalities:

17) Write and graph a compound inequality:

All real numbers that are greater than -7 and less than 4.

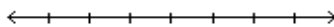


Regular
Notation:

Interval Notation:

18) Solve and Graph:

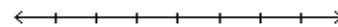
$$-1 < 4x + 7 \leq 11$$



Interval
Notation:

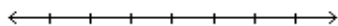
19) Solve and Graph:

$$3 \geq -2x - 5 \geq -11$$



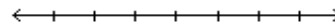
Interval
Notation:

20) Graph and write a compound inequality: All real numbers that are at most -7 or at least 4.



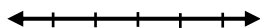
21) Solve and graph:

$$-3x - 1 > 11 \quad \text{or} \quad -2x - 5 < -9$$

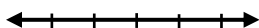


Solving Absolute Value Equations and Inequalities: Solve and Graph.

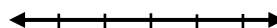
22) $3|x| - 2 = 13$



23) $4|x| - 2 < 10$



24) $-3|x - 5| < -12$



25) Is $|x| + 4 < 3$ true *sometimes*, *always*, or *never*? Explain.