Name: _____   Date: _____

1. Which is the solution to the following inequality?

$$2x - 7 \geq 9$$

(handwritten: $+7 \quad +7$ / $2x \geq 16$ / $\frac{2x}{2} \quad \frac{16}{2}$ / $x \geq 8$)

A. $x \geq 8$ B. $x \geq 1$

C. $x \leq 8$ D. $x \geq -1$

2. What is the solution to the inequality below?

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

(handwritten left margin: $12x > 5x - 10$ / $-5x \quad -5x$ / $7x > -10$ / $\frac{7}{7} \quad \frac{7}{7}$ / $x > -\frac{10}{7}$)

A. $x > -\frac{2}{7}$ B. $x < -\frac{2}{7}$

C. $x > -\frac{10}{7}$ D. $x < -\frac{10}{7}$

3. What is the solution to the inequality below?

$$-3x - 1 \leq 5$$

(handwritten: $+1 \quad +1$ / $-3x \leq 6$ / $\frac{-3x}{-3} \quad \frac{6}{-3}$ / $x \geq -2$)

A. $x \leq -2$ B. $x \geq -2$

C. $x \leq -\frac{4}{3}$ D. $x \geq -\frac{4}{3}$

4. The cost of renting a boat is $20 plus $2.50 per hour, where x is the number of hours of boat rental. Millie wants to spend less than $50 on the boat rental. Which inequality models this situation?

A. $20x + 2.50 > 50$ B. $20x + 2.50 < 50$

C. $20 + 2.50x > 50$ D. $20 + 2.50x < 50$

5. Chris won at most 300 tickets at an arcade game. He spent 128 tickets on a ball and the rest on gum. Each piece of gum was 25 tickets. Which inequality can be used to determine the greatest number of pieces of gum Chris could have purchased?

A. $128 + 25g \leq 300$ B. $128 + 25g \geq 300$

C. $128 - 25g \leq 300$ D. $128 - 25g \geq 300$

6. Shari is opening a lemonade stand. She buys lemons and sugar for $3.25 and a sign for $1.50. She will sell each cup of lemonade for $0.50. Which inequality could Shari use to determine the number of cups of lemonade (n) she must sell to earn a profit of at least $10 ?

A. $0.5n - 4.75 \leq 10$ B. $0.5n + 4.75 \leq 10$

C. $0.5n - 4.75 \geq 10$ D. $0.5n + 4.75 \geq 10$

(handwritten: you have to take out expenses!)

7. Juan is saving to buy a leather basketball that costs $40.00. He already has $12 and will save $3.50 per week until he has enough money to buy the basketball. At this rate, what is the least number of weeks it will take for Juan to have $40.00?

A. 4   B. 8   C. 12   D. 15

(handwritten: $3.50x + 12 \geq 40$ / $3.50x \geq 28$ / $x \geq 8$)

8. When John bought his new computer, he purchased an online computer help service. The help service has a yearly fee of $25.50 and a $10.50 charge for each help session a person uses. If John can only spend $170 for the computer help this year, what is the maximum number of help sessions he can use this year?

A. 4 sessions   B. 12 sessions

C. 13 sessions   D. 14 sessions

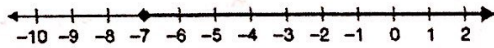*(handwritten: $25.50 + 10.50x \leq 170$ / $10.50x \leq 144$ / $x \leq 13.7$)*

9. Teri wants to buy as many pencils and pens as possible. She wants three pencils for every pen. Each pencil costs $0.15 and each pen costs $0.20. She cannot spend more than $6.50.

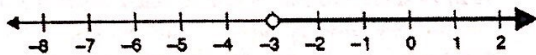What is the maximum number of pens she can purchase?

A. 10   B. 11   C. 30   D. 33

10. Use the graph below to answer the question that follows.

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2

This graph is the solution set for which inequality?

A. $x - 14 > 7$ B. $x - 7 \geq 14$

C. $\dfrac{2x}{2} \geq \dfrac{-14}{2}$ D. $14x \geq -2$

(handwritten) $x \geq -7$

11. Use the line graph below to answer the question that follows.

-8 -7 -6 -5 -4 -3 -2 -1 0 1 2

What is the solution set of the graph above?

A. $x < -3$ B. $x \leq -3$

C. $x > -3$ D. $x^3 - 3$

12. Which of the following graphs best represents the solution of the inequality below?

$2x - 5 < 3$

(handwritten)
$2x - 5 < 3$
$ +5 \ +5$
$2x < 8$
$x < 4$

A.
-6 -4 -2 0 2 4 6

B.
-6 -4 -2 0 2 4 6

C.
-6 -4 -2 0 2 4 6

D.
-6 -4 -2 0 2 4 6

13. Use the inequality below to answer question(s).

$5 - x \leq 8$

Which graph represents the solution set for the inequality?

A.
-5 -4 -3 -2 -1 0 1 2 3 4 5

B.
-5 -4 -3 -2 -1 0 1 2 3 4 5

C.
-5 -4 -3 -2 -1 0 1 2 3 4 5

D.
-5 -4 -3 -2 -1 0 1 2 3 4 5

(handwritten)
$5 - x \leq 8$
$-5 \qquad -5$
$\dfrac{-x}{-1} \leq \dfrac{3}{-1}$
$x \geq -3$

14. Look at the inequality below.

$12 - 4x \leq 20$

Which of these shows the solution to this inequality?

A.
-6 -4 -2 0 2

B.
-6 -4 -2 0 2

C.
-12 -10 -8 -6 -4

D.
-12 -10 -8 -6 -4

(handwritten)
$12 - 4x \leq 20$
$-12 \qquad -12$
$\dfrac{-4x}{-4} \leq \dfrac{8}{-4}$
$x \geq -2$

15. Which graph below represents the solution to the inequality below?

$2(2x - 6) \geq x + 3$

A.
-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6

B.
-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6

C.
-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6

D.
-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6

(handwritten)
$4x - 12 \geq x + 3$
$-x \qquad -x$
$3x - 12 \geq 3$
$ +12 \ +12$
$3x \geq 15$
$x \geq 5$

Learning Goal 4.2 - Solving Inequalities