Equations & Inequalities Practice

Name: _____ Test Review Date: _____

1. Choose the correct solution for the equation: $x/2 - 12 = 24$

   A. $x = 18$ B. $x = 24$

   C. $x = 6$ D. $x = 72$

2. For what value of x will $3x + 4 = x - 6$ be a true statement?

   A. $x = -5$ B. $x = -\frac{5}{2}$

   C. $x = -1$ D. $x = -\frac{1}{2}$

3. Solve: $4(6x - 10) = 8x + 40$

   A. 0 B. $\frac{5}{2}$ C. $\frac{25}{8}$ D. 5

4. What is the solution to the equation?

   $\frac{7}{2}x - 2 = 28 - 4x$

   A. $x = 0$ B. $x = \frac{2}{7}$

   C. $x = 4$ D. $x = 7$

5. What is the solution to the equation?

   $-12 = 6 + \frac{2}{3}y$

   A. −27 B. −24 C. −12 D. −9

6. What is the value of x in the equation below?

   $2(10x + 8) - 1 = 5(x - 6)$

   A. $x = -3$ B. $x = -\frac{13}{15}$

   C. $x = \frac{3}{5}$ D. $x = 3$

7. Solve $10y + 7 - 4y = -5 + 6y + 22$. Tell whether the equation has infinitely many solutions or no solution, or solve for y.

8. Katie and Tom are selling pens. Katie makes a dollar for every two pens she sells and has $5 dollars that she made yesterday. Tom makes $2 for every three pens he sells and he owes the teacher $4 from yesterday. After selling pens all day they have the same amount of money. Using the equation below, how many pens did they sell?

$$\frac{1}{2}x + 5 = \frac{2}{3}x - 4$$

A. 9 B. $\frac{45}{2}$ C. 54 D. 3

9. Janice buys 74 packs of gum in a variety of flavors. She chooses twice as many packs of green apple gum as packs of spearmint gum.

How many packs of spearmint gum does Janice buy?

$2S + S = 74$

10. Trish's resting heart rate is 50 beats per minute. For every minute she exercises, her heart rate increases 5 beats per minute. How long will it take her to reach a heart rate of 120 beats per minute? $5x + 50 = 120$

A. 5 minutes B. 14 minutes

C. 34 minutes D. 70 minutes

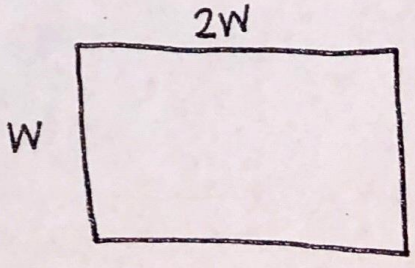
11. THREE FOURTHS OF A NUMBER, MINUS SIX IS FORTY-FIVE. WHAT IS THE NUMBER?

12. The top of a rectangular table has a length that is two times its width. The perimeter of the tabletop is 144 inches.

What is the width of the tabletop?

A. 12 inches B. 24 inches

C. 36 inches D. 72 inches



Which word problem could be solved by using the equation $x + 6 = 15$?

A. Marcie has 6 more homework problems to solve. If she had a total of 15 problems to solve, how many has she already completed?

B. Marcie has completed 15 homework problems. She has 6 more to solve. How many problems did she have for homework?

C. Marcie needs to complete 15 more problems for her math homework. She has completed a total of 6. How many problems will she complete for homework?

D. Marcie has 6 more problems to solve for homework than she had last night. If she had 15 problems to solve last night, how many problems does she have to solve tonight?

14. Which is the solution to the following inequality?

$2x - 7 \geq 9$

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

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

15. Which is the solution to the inequality?

$2x - 3 \geq -4x + 2$

A. $x \geq \frac{1}{2}$ B. $x \leq \frac{1}{2}$ C. $x \geq \frac{5}{6}$ D. $x \leq \frac{5}{6}$

16. What is the solution to the inequality below?

$-3x - 1 \leq 5$

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

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

17. Miki works less than 40 hours per week. Which inequality represents x, the number of hours Miki works per week?

A. $x \geq 40$ B. $x \leq 40$

C. $x > 40$ D. $x < 40$

18. A go-cart has a maximum weight limit of 240 pounds. Which inequality correctly represents this weight limit, w?

A. $w \leq 240$ pounds B. $w < 240$ pounds

C. $w \geq 240$ pounds D. $w > 240$ pounds

19. The cost to rent a construction crane is $750 per day plus $250 per hour of use. What is the maximum number of hours the crane can be used each day if the rental cost is not to exceed $2500 per day? $250x + 750 \leq 2500$

A. 2.5 B. 3.7 C. 7.0 D. 13.0

20. An airline requires that each piece of luggage carried onto a plane must meet the following requirement.

> When the length, the width, and the height, in inches, of a piece of luggage are added together, the total must not be greater than 45 inches.

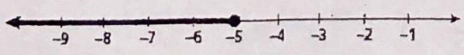
If a piece of luggage has a height of 20.5 inches and a length of 14.75 inches, what is the maximum width allowed for that piece of luggage? $20.5 + 14.75 + x < 45$

A. 9.75 inches B. 10.2 inches

C. 10.25 inches D. 11.8 inches

22. Which graph best represents the solution set for the following inequality?

$$5b + 4 \leq -6 + 3b$$

A.


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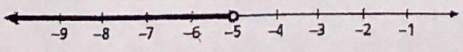

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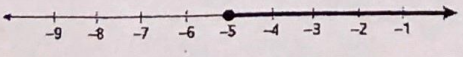

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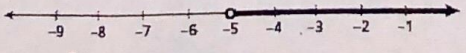
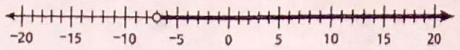


23. Which number line best represents $-7 \leq x$?

A.


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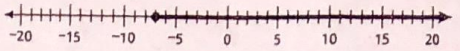

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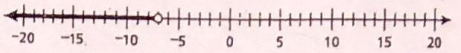

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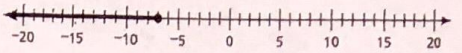
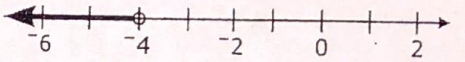


24. Which choice is a graph of the solution set for $12 - x < 8$?

A.


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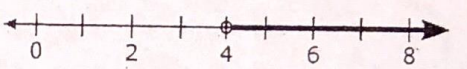

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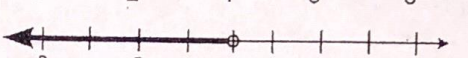

D.