“PRACTICE” TEST... Unit 2 – Equations and Inequalities

Part 1: Solve the equations, if possible. No decimal answers unless decimals are given.

1) \( \frac{2}{3}(x + 4) = 8 \)

2) \( 4(-5 + x) = 4x - 20 \)

3) \( -4y - 3 = 6y + 2 \)

4) \( 5(y + 2) = 5y - 2 \)

Part 2: Solve the inequality. No decimal answers unless decimals are given.

5) \( 5 < 2 - x \)

6) \( -6k + 15 \leq -21 \)

Part 3: Solve the compound inequalities. No decimal answers unless decimals are given.

7) \( -4 \leq -3y - 1 \leq 5 \)

8) \( 10x - 4 \leq -24 \quad or \quad 5x + 3 > 18 \)

9) \( 6 - a < 1 \quad or \quad 3a \leq 12 \)

Part 4: Solve the absolute value equation or inequality. No decimals unless decimals are given.

10) \( |x + 2.7| \leq 5 \)

11) \( |3a + 5| - 4 = 22 \)

12) \( |7p - 5| > 9 \)
Part 5: Graph each solution set on the provided number line.

13) \(-2 < b \leq 3\)

14) \(n < -5 \text{ or } n > 3\)

Part 6: Solve the application problem. Write your final answer on the provided line. Don’t forget units.

15) Jill sold half of her comic books and then bought sixteen more. She now has 36. How many comic books did Jill start with?

Define the variable:

Equation:

16) The length of a rectangle is 6 inches more than its width. The perimeter of the rectangle is 24 inches. What is the length of the rectangle?

Define the variable:

Equation:

Part 7: Applications... Multiple-Choice.

17) Mrs. Smith wrote “eight less than three times a number is greater than 15” on the board. If \( n \) represents the number, which inequality is a correct translation of this statement?

A) \(3n - 8 > 15\)  
B) \(3n - 8 < 15\)  
C) \(8 - 3n > 15\)  
D) \(8 - 3n < 15\)

18) Which value of \( x \) is in the solution set of the inequality \(-4x + 2 > 10\) ?

A) \(-2\)  
B) \(2\)  
C) \(3\)  
D) \(-4\)

19) Students in a 9th grade math class measured their heights, \( h \), in centimeters. The height of the shortest student was 155 cm and the height of the tallest student was 190 cm. Which inequality represents the range of heights?

A) \(155 < h < 190\)  
B) \(155 \leq h \leq 190\)  
C) \(155 > h > 190\)  
D) \(155 \geq h \geq 190\)

20a) Peter begins his kindergarten year able to spell 10 words. He is going to learn to spell 2 new words every day.

20b) A) Write an inequality to determine how many days, \( d \), it takes Peter to be able to spell at least 75 words.

B) Use this inequality to determine the minimum number of whole days it will take for him to be able to spell at least 75 words.