MAT102 - Quiz 1 - Ken Mead - Sample

Problems 1 – 6 are multiple choice worth 5 points apiece.

1. Translate and simplify: Two less than the product of a number and three is eight.
   a. \(2 - 3x = 8\)  
   b. \(3x - 2 = 8\)  
   c. \(2 - x + 3 = 8\)  
   d. \((8)(2) = x + 3\)

2. Solve for \(x\): \(4(x - 1) = 7x + 10 + x\)
   a. 3.5  
   b. -3.5  
   c. 5.5  
   d. -5.5

3. If you have a total of 30 oranges and apples, and \(x\) apples, then how many oranges do you have?
   a. \(x - 30\)  
   b. \(x + 30\)  
   c. 30\(x\)  
   d. 30 - \(x\)

4. Which equation is equivalent to: \(\frac{x}{3} + \frac{3}{2} = 10\)
   a. \(2x + 5 = 10\)  
   b. \(2x + 15 = 10\)  
   c. \(2x + 15 = 100\)  
   d. \(5x + 6 = 10\)

5. Which compound inequality is equivalent to the set of all real numbers less than 3?
   a) \(\{x < 3\} \cup \{x > 5\}\)  
   b) \(\{x < 3\} \cap \{x > 5\}\)  
   c) \(\{x < 3\} \cup \{x < 5\}\)  
   d) \(\{x > 3\} \cap \{x < 5\}\)

6. Which inequality is equivalent to the graph to the right?
   a. \(x < -2\)  
   b. \(x > -2\)  
   c. \(x \leq -2\)  
   d. \(x \geq -2\)

Show all work for problems 7 -13. Answers without accompanying work will be given minimal credit.

7. Evaluate: \(5a + b^2 - 4ab\) when \(a = -3\) and \(b = 2\).

8. Solve and graph on a number line the solution set for the compound inequality:
   \(-7 < 5 - 2x \leq 1\)

9. Translate and solve: The sum of twice a number and seven is 8 less than that number.

10. Solve this literal equation for \(y\): \(3xy + 6x = 8xy - 2x + 1\)

11. Simplify completely: \(6 + 2(x - 1) + 2x + 14 - 2(3x - 1)\).

12. Set up an equation and solve: I have a total of $2.10 in my pocket in nickels, dimes, and quarters. There are twice as many nickels as quarters and one more nickel than dime. How many dimes do I have?

13. Two cars traveling at constant speeds in opposite directions end up 279 miles apart after 3 hours. If car A was traveling 11 mph faster than car B, how fast was car A traveling?