BRONX COMMUNITY COLLEGE
of the City University of New York

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

MATH 05 Exam 2
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Name: _____

Directions: Write your answers in the provided space. To get full credit you *must* show all your work. Simplify your answers whenever possible. Be certain to indicate your final answer clearly. **Each problem is worth** 5 **points**

1. Evaluate: $13 - 28 \div 4 \cdot 2$

   A. 1 B. -1 C. 6 D. -6

2. Write a mathematical statement that represent the following English statement:

   Five more than three times a number is 65**.**

3. Evaluate $a^2 - b^2$, when $a = 3$ and $b = -3$.

   A. 18 B. -18 C. 0 D. 12

4. Evaluate the expression $x^2 - 2xy + y^2$, when $x = 3$ and $y = -2$.

5. Evaluate the expression

$$\frac{-x^2 + 3}{2 - x}$$

   when $x = -2$.

   A. $\frac{1}{4}$

   B. $-\frac{1}{4}$

   C. $\frac{12}{5}$

   D. -12

For the following two statements indicate whether they are true or false:

6. If $x = \frac{1}{2}$ and $y = -\frac{2}{3}$, then $4x + 6y = -2$

   A. True B. False.

7. If $x = -2$ and $y = 4$, then $x^2 + y = y^2 + 3x - 1$

   A. True B. False.

8. Solve for a: $5(2 - 3a) = 1 - 12a$

   A. $a = 5$ B. $a = -5$ C. $a = 3$ D. $a = -3$

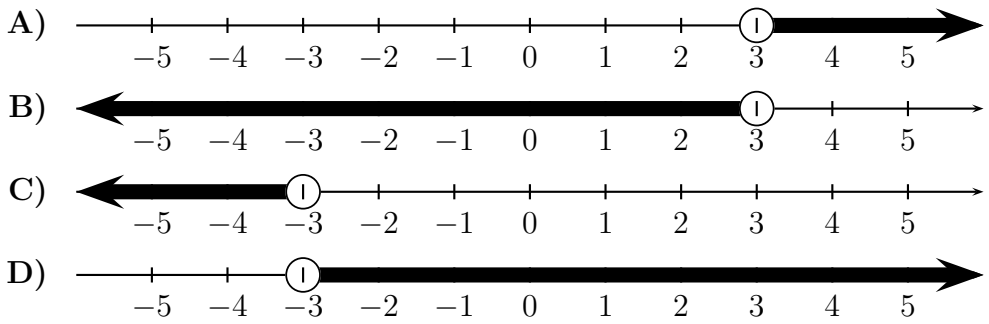
9. Find the number that satisfies the statement in Question 2.

10. If x represents a number, which equation is correct translation of the sentence?

    15 **is** 12 **less than** 2 **times a number.**

    A. $15 = 12 - 2x$ B. $15 = 2(x - 12)$ C. $15 = 2x - 12$ D. $15 = 2(12 - x)$

11. Find the graph of the solution to the inequality $2x - 6 < 5x + 3$



12. Solve for z: $2x - 4z = 3 - y$

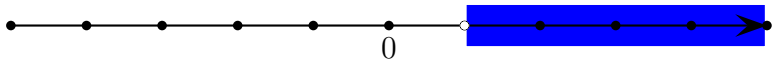
    A. $z = \frac{2x - y + 3}{4}$

    B. $z = \frac{3 - 2x - y}{4}$

    C. $z = \frac{2x + y - 3}{4}$

    D. $z = -4(2x + y - 3)$

13. The following is the graph of the solution set of a linear inequality.



The inequality is:

A. $x+1>2$ B. $x+1<2$ C. $x+1\geq 2$ D. $x+1\leq 2$

14. Solve the equation: $\dfrac{x-2}{5}+\dfrac{8-x}{3}=x$

15. Solve the equation:

$$-2(3x-1)=5(x+2)-11x+7$$

16. Evaluate the expression $b^2 - 4ac$, when $a = -2$, $b = -3$, $c = 2$.

17. Find b if when $x = 2$, $y = -3$, and $m = 2$, the following equation is true:

$$y = mx + b$$

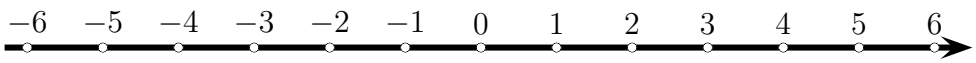
18. Solve the following equation:

$$3(x + 7) - 8 = x + 3$$

19. Solve the following inequality, and graph the solution set in the provided graph.

$$9 - 2(2x + 3) \geq -7x - 3$$

The graph of the solution set is:



20. For a linear equation with one unknown both 0 and -7 are solutions. Which of the following must necessarily be true?

    A. There are no other solutions.

    B. -3.5 is also a solution.

    C. We can't know all solutions.

    D. This can't happen with a linear equation.