MATH 05   Exam 1 - Extra Credit

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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 question is worth 4 points**

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1. Evaluate: $1 - 2^5 \div 8 \cdot 4$

   A. -15 B. 0 C. -17 D. 15

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

   Eight less than five times a number is 92.

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

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

   A. 4 B. -8 C. 8 D. 0

5. Evaluate the expression $x^2 - 2y - y^2$, when $x = -3$ and $y = -2$.

6. Evaluate the expression $\dfrac{y_2 - y_1}{x_2 - x_1}$, when $x_1 = -3$, $x_2 = 5$, $y_1 = -7$, and $y_2 = -15$.

A. $\dfrac{1}{4}$ B. $-\dfrac{1}{4}$ C. 1 D. -1

7. Solve for a: $2(3 - 4a) = 2 - 10a$

A. $a = 2$ B. $a = -2$ C. $a = -\dfrac{2}{9}$ D. $a = 4$

8. If n represents a number, which equation is correct translation of the sentence?

25 is 13 less than 3 times a number.

A. $25 = 3(13 - n)$ B. $25 = 13 - 3n$ C. $25 = 3(n - 13)$ D. $25 = 3n - 13$
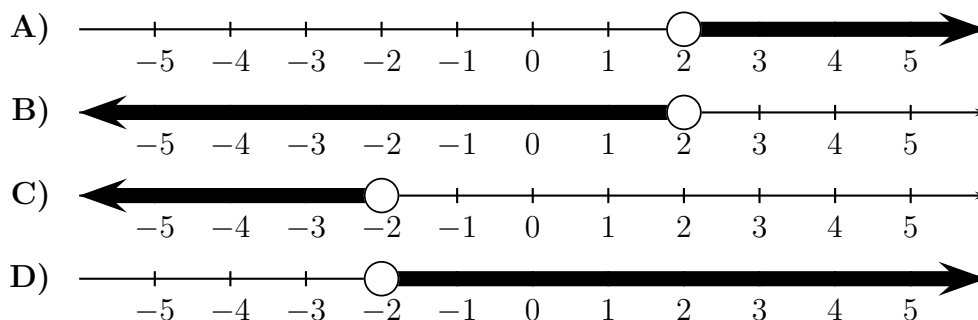
9. The following is the graph of the solution set of a linear inequality.

The inequality is:

A. $x - 1 < -3$ B. $x - 1 > -3$ C. $x - 1 \le -3$ D. $x - 1 \ge -3$

10. Find the graph of the solution to the inequality $-2x + 6 > 3x - 4$

11. Solve for z: $4x - 5z = 3 - 2y$

A. $z = -5(4x + 2y - 3)$

B. $z = \dfrac{4x - 2y + 3}{5}$

C. $z = \dfrac{3 - 4x - 2y}{5}$

D. $z = \dfrac{4x + 2y - 3}{5}$

12. Evaluate the expression $\sqrt{b^2 - 4ac}$, when $a = -15$, $b = -1$, $c = 2$.

13. Solve the equation: $$\frac{x-2}{4} + \frac{8-x}{3} = x$$

14. Solve the equation:
$$-2(3x - 1) = 5(x + 2) - 11x - 8$$

15. Find b if when $x = -2$, $y = -7$, and $m = \dfrac{3}{2}$, the following equation is true:
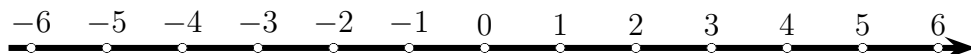
$$y = mx + b$$

16. Solve the following equation:

$$3(2x + 10) - 8 = x + 7$$

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

$$7 - 3(5x - 3) \geq -7x + 8$$

The graph of the solution set is:

$$
\begin{array}{cccccccccccc}
-6 & -5 & -4 & -3 & -2 & -1 & 0 & 1 & 2 & 3 & 4 & 5 & 6
\end{array}
$$

18. Solve the equation:

$$\frac{3x}{2} - 7 = \frac{x}{3}$$

19. Find y so that when $x = -3$ the following equation is true:

$$2x - 7y = 5$$

20. The length of a rectangle is one inch less than six times its width. Find the dimensions of the rectangle if its perimeter is 5 inches.

21. Solve for l: $V = hlw$.

22. The sum of three consecutive integers is 72. Find the integers.

23. Recall that the formula that converts degrees Fahrenheit F to degrees Celsius C:

$$F = \frac{9}{5}C + 32$$

A certain day the temperature measured in degrees Fahrenheit was 40 more than when it was measured in Celsius. What was the temperature that day?

24. $\frac{3}{2}$ is a solution of the equation $6x^2 + 7x - 3 = 0$

   A. True   B. False

25. Find the real number a so that the following equation is an *identity*, i.e. it is true for all values of x:

$$5(x - 3) + 2a = 3(2x - 1) - x + 8$$