Name: ______________________________

**Instructions:**
Do the best you can. Show all of your work and identify, clearly, your answer. Bring your completed

test to my office (Sci 2330) BEFORE 10am on Thursday, August 30. If you turn it in on time, you
will receive 20pts as a bonus quiz; otherwise you will not receive any bonus points.

1. If \( a = -3, b = -3, \text{ and } c = 2 \), find the value of,

\[
\frac{4ac - b}{c - a}
\]

2. Find an equation of the line that passes through the point \((x, y) = (3, 1)\) and is perpendicular
to the line \(2x + 3y = 12\)

3. Simplify the expression \(7x - 2x - 9x\).

(a) \(-14x\)
(b) \(-4x\)
(c) \(4x\)
(d) \(0\)

4. Simplify, \(-3(2x + 5) - 4(3x - 2)\).

5. Solve for \(m\), \(4m - (7m + 6) = -m\).
6. Solve for $y$, $4y + 12 < 6y$.

7. Multiply to expand: $-4x^2y(6x^3y^2 - 5xy^6)$.

8. Add: $(x^2 + 3x + 7) + (4x^3 - 6x^2 - 5x + 4)$.

9. Multiply: $(4x - 7)(3x + 2)$.

10. Write the expression in its simplest form and without negative exponents:

\[
\left[ \frac{x^{-2}y^3}{x^{-5}y^{-4}} \right]^{-2}
\]
11. Write the following as a single fraction:

\[ \frac{1}{2x} + \frac{2}{3y} - \frac{5}{6xy} \]

12. Solve for \( z \), \( 2x^2 + z - 28 = 0 \).

13. Solve for \( y \).

\[ x = \frac{4(y-z)}{k} \]

14. Simplify \( -4/\sqrt{12} \).

15. Draw a graph of \( y = -2x + 3 \) in the space below.

16. Draw a graph of \( y = x^2 - 5 \) in the space below.
17. For the equation of a line $y = -3x - 3$, if $x = 4$, what is $y$?

18. Solve for $x$, $32^x = 16^{2x-1}$.

19. Solve these two equations simultaneously for $x$ and $y$: $3x + 2y = -13$ and $xy = 6$.

20. Solve the following inequality

$$2x^2 + 3x - 35 \leq 0$$

21. Solve the following inequality

$$\left| \frac{x + 7}{5} \right| > 2$$