Name _____

Directions:

Clear everything off your desk except this test, a pencil/pen, and a calculator.

Show all work to receive full credit, yes that means you need to show each step.

Read the directions for each question carefully.

You will have up to **60 minutes** to complete this test. Do not spend too much time on any one problem. Skip problems and come back to them if necessary.

Please (circle) or [box] all your final answers.

I _____ certify that I have not cheated or attempted to cheat on this exam. This includes the use of any prohibited materials or collaborating with other students, as well as any other forms of cheating. I understand that by cheating I will earn a grade of zero on this exam.

1. (2 pts) Find the prime factorization of each number. (Remember to write it as multiplication.)

   (1) 24

   (2) 54

2. (2 pts) Find the Least Common Multiple of the following numbers using the indicated method.

   (1) 12 and 18. List the common factors to find the LCM.

   (2) 24 and 54. Use the prime factorization method.

3. (4 pts) Place each number from this set $-5, 0, 2.5, \sqrt{2}, \frac{1}{2}, 6$ into **every** category in which it belongs.

   (1) Integers:

   (2) Rational Numbers:

   (3) Irrational Numbers:

   (4) Real Numbers:

4. (6 pts) Evaluate the following statements by writing either 'True' or 'False.' Justify your answers by graphing each point on the number line.

   (1) $-5 > -5.99$

(2) $4.7 < 4.\overline{7}$

(3) $\frac{5}{12} > \frac{5}{24}$

5. (4 pts) Convert each fraction, decimal, or percent into its **two** other forms. Round decimals to the hundredths place and simplify fractions.

(1) $\frac{3}{4}$

(2) .34

6. (11 pts) Perform the indicated operation to evaluate to **simplest** form. Show your work to receive full credit.

(1) $\frac{5}{6} + \frac{3}{4}$

(2) $\frac{5}{16} - \frac{3}{20}$

(3) $\frac{2}{15} \cdot \frac{5}{12}$

(4) $\frac{2}{3} \div \frac{5}{6}$

(5) 3.23 + 4.78

(6) 4.77 * 5.3

7. (10 pts) Use the correct order of operations to evaluate each expression.

(1) $5 + 2 \cdot |5 - 6 \cdot 4|$

(2) $3^2 - 7 \cdot (1 + 2^3)$

(3) $\frac{7+8*2^3}{23-4^3+5*6}$

8. (6 pts) Identify like terms by underlining, circling, or boxing them (don't forget about constants). Then, simplify by combining like terms.

   (1) $3a + 7 - (4a - 5)$

   (2) $3(t - 2) - 5(3t - 9)$

   (3) $y(y - 2) + 3(y + 1)$

9. (4 pts) Evaluate the expression for the given values of $a = 1, b = -3$, and $c = 5$.

   $$\frac{3a^2 - b}{2c} + \frac{b^3 - (2a + c)}{10}$$

10. (6 pts) Identify the property represented by each equation using the word bank below. (Hint: You will only use each property once).

    Additive Identity Property, Multiplicative Identity Property, Additive Inverse Property, Multiplicative Inverse Property, Commutative Property of Addition, Commutative Property of Multiplication, Associative Property of Addition, Associative Property of Multiplication, Distributive Property, Multiplicative Zero Property

    (1) $6 \cdot (5 + 4) = 6 \cdot 5 + 6 \cdot 4$

    (2) $\frac{3}{4} \cdot \frac{4}{3} = 1$

    (3) $12 + 5 = 5 + 12$

    (4) $9 + (-9) = 0$

    (5) $a(b \cdot c) = (a \cdot b)c$

(6) $3 \cdot 12 = 12 \cdot 3$

11. (2 pts) How did you prepare for this test? Please be honest and as specific as possible (there is no wrong answer here).