MATH 830 **Name**
Quiz 1

Use Algebraic Notation AND Show All of Your Work

Perform the indicated operations, show the steps clearly using correct algebraic notation, and write your answer in lowest terms.

[8 pts]

1. $\frac{5}{9} \div \frac{7}{18}$

[10 pts]

2. $\frac{11}{12} - \frac{5}{9}$

[6 pts]

3. Which **one** of the following is true? *(Circle the correct letter.)*

(a) $\frac{2}{3} + \frac{1}{5} = \frac{3}{8}$

(b) $\frac{2+6}{2} = \frac{\cancel{2}+6}{\cancel{2}} = 6$

(c) $\frac{1}{2} \div 4 = 2$

(d) Every fraction has infinitely many equivalent fractions.

[4 pts each]

4. List all numbers from the set $\left\{-8,\ \sqrt{5},\ -1,\ -\frac{8}{7},\ 0,\ 0.335,\ 6,\ 8.3,\ \sqrt{100}\right\}$ that are

(a) Natural numbers

$\{$ _____ $\}$

(b) Whole numbers

$\{$ _____ $\}$

(c) Integers

$\{$ _____ $\}$

(d) Rational numbers

$\{$ _____ $\}$

(e) Irrational numbers

$\{$ _____ $\}$

(f) Real numbers

$\{$ _____ $\}$

[6, 3, 3 pts]

5. Describe what is meant by the absolute value of a number? Give **two** examples.

Example 1:

Example 2:

[5 pts]
Insert either <, >, or = in the box to make a true statement (support your result).

6. $\left|-\frac{9}{3}\right| \square \left|-\frac{3}{9}\right|$

[4 pts each]
Plot the given points in a rectangular coordinate system. Label each point. Indicate in which quadrant each point lies.

7. $\boldsymbol{A}\ (-5,2)$

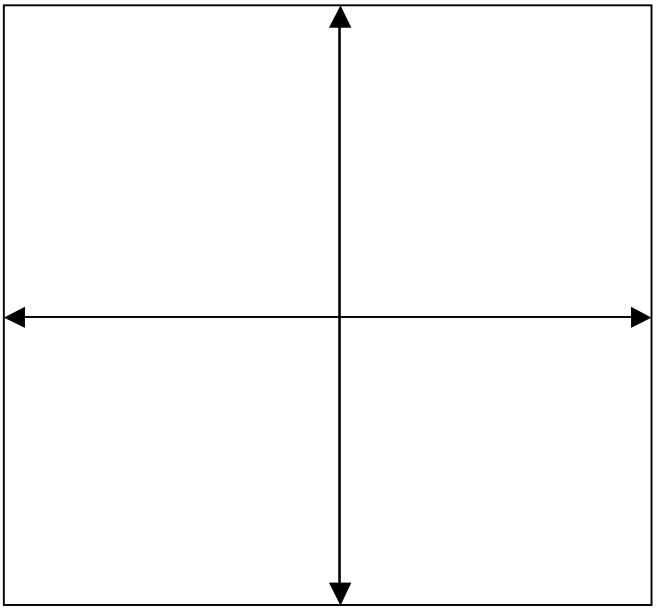
Quadrant:____

8. $\boldsymbol{B}\ (-2,-5)$

Quadrant:____

9. $\boldsymbol{C}\ (5,-2)$

Quadrant:____



Use the Commutative Property of Addition to write an equivalent algebraic expression. **[5 pts]**

10. $6a+7b$

Use the Associative Property of Addition to write an equivalent algebraic expression. **[5 pts]**

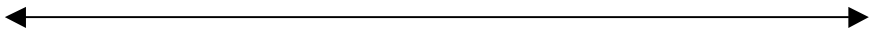
11. $5+(9+w)$

Simplify. **[8 pts]**

12. $-7(4a-3b)+3(5a-4b)$

Add using a number line. **[5 pts]**

13. $-3+(-6)=$ ___



Simplify each algebraic expression. **[6, 8, 9 pts]**

14. $17-(-7y)+14y-(-4)$

15. $9-5\left[8-(3y-4)\right]$

16. $4\left(6x^2-5\right)-\left[3\left(5x^2-1\right)+7\right]$

Evaluate. **[4 pts each]**

17. $\left(-\frac{7}{6}\right)(-36)$

18. $\frac{0}{-17}$

19. $\frac{-10}{0}$

Evaluate. **[5 pts each]**

20. $(-5)^3$

21. -12^2

[13, 14 pts]
Evaluate using the ***ORDER OF OPERATIONS (****show the steps clearly using correct algebraic notation****).***

22. $10^2 - 100 \div 5^2 \cdot 2 - 3$

23. $\left[11 - 4\left(2 - 3^3\right)\right] \div 37$

Evaluate the following expression for the given value of the variable. **[16 pts]**

24. $-2x^2 - 11x; \quad x = -3$