1st Semester Midpoint Final Exam

Integrated Math I

Unit 1: Expressions

For the following expression, identify the:

a) Terms
b) Coefficients
c) Variables
d) Exponents
e) Constants

IF you cannot identify any of these, write NONE.

1. $5x^3 + 7x^2 - 3x + 9$

a)

b)

c)

d)

e)

Simply each of the following expressions using the order of operations and showing all of your steps along the way:

2. $\left((13 - 1) \times 2\right) \div \left((3 - 1) \times 2\right) - 2$	3. $(k + h \div 2 + 2 - 1)(k + 2)$ Using h = 2 and k = 1

Simplify using the distributive property and combining like terms when possible:

4. $-2(9x - 1) + 9$	5. $-4(8 + a) + 9(1 - 5a)$

Translate into an algebraic expression using numbers, variables, and operation signs:

6. The sum of ten and five times a number

Write a verbal expression for each algebraic expression:

7. $15 - 8a^3$

Unit 2: Equations and Inequalities

Solve each of the following One Step Linear Equations:

8. $-9 = k - 15$	9. $23 = n + 12$
10. $-15m = -180$	11. $-9p = 90$

Solve each of the following Two-Step Linear Equations:

12. $9 + 10r = 129$	13. $4 = \frac{m}{15} + 5$

Solve the following Multi-Step Linear Equation:

14. $-3(6 - 3v) = -(-4 + 2v)$
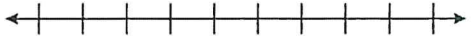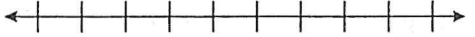
Solve each of the following Absolute Value Linear Equations:

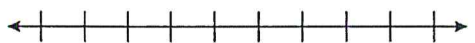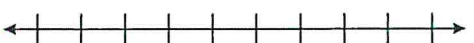| 15. $|1 - 7r| + 7 = 34$	16. $8 + 4|9a - 7| = 52$

Solve each of the following Literal Equations for the variable indicated:

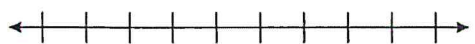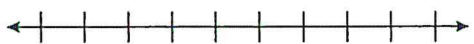| 17. $g = \frac{cy}{x}$, solve for x.	18. $xk = v - w$, solve for x.

Solve each of the following One-Step Linear Inequalities and graph its solution:

19. $m + 16 \geq 17$	20. $4 \geq a + 16$
21. $10x \leq 60$	22. $\frac{p}{2} \leq -16$

Solve each of the following Two-Step Linear Inequalities and graph its solution:

23. $3 + \frac{v}{2} > 8$	24. $\frac{x-3}{3} \leq -6$

Solve each of the following Multi-Step Linear Inequalities and graph its solution:

25. $6(2k - 7) + 6 \leq -132$	26. $-(7 - 3p) \leq -2(1 - p)$

Unit 3: Intro to Functions

Find the slope of the line through each pair of points:

27. $(-7, 14) \& (-11, -9)$	28. $(-19, -14) \& (5, 11)$

Write the slope-intercept form of the equation given the slope and y-intercept:

29. Slope $= \frac{9}{5}$ and y-intercept = 5

Write the point-slope form of the equation of the line through the given point with the given slope:
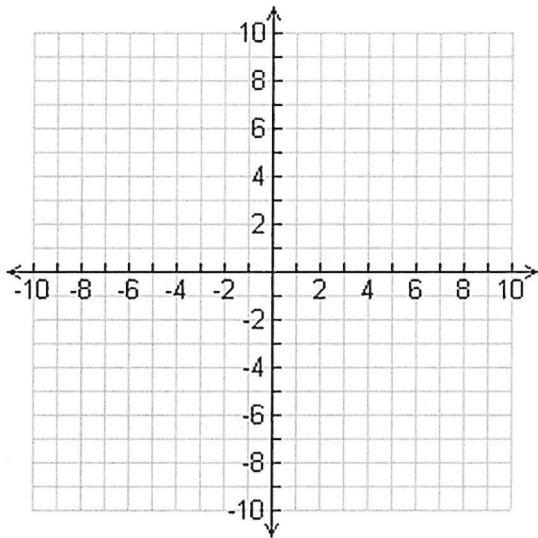
30. Through (2,-5) with slope $= -\frac{5}{2}$

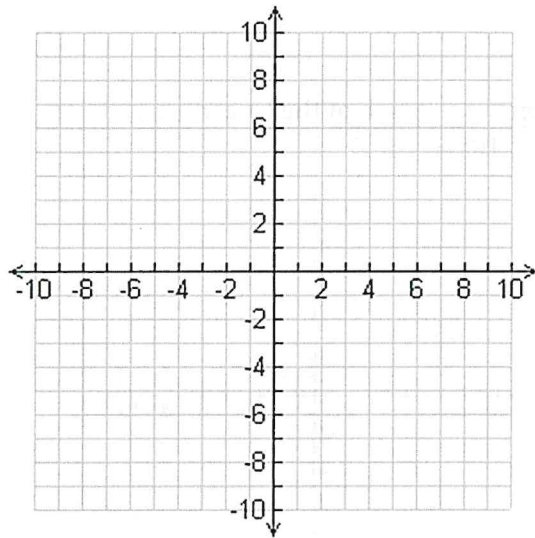**Write the slope-intercept form of the equation of the line through the given points:**

31. Through (-2,5) and (-2,-4)

Sketch the graph of each line:
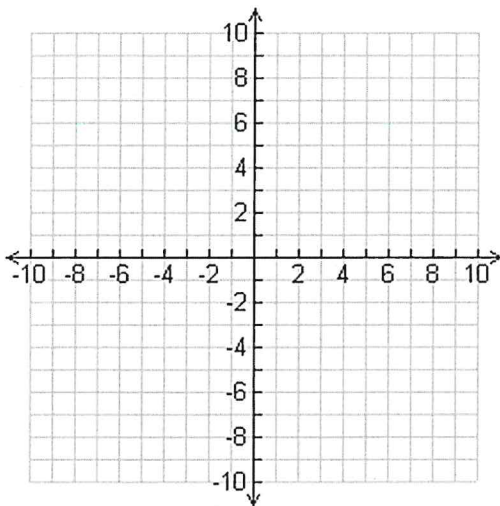
32. $y = 5x + 2$
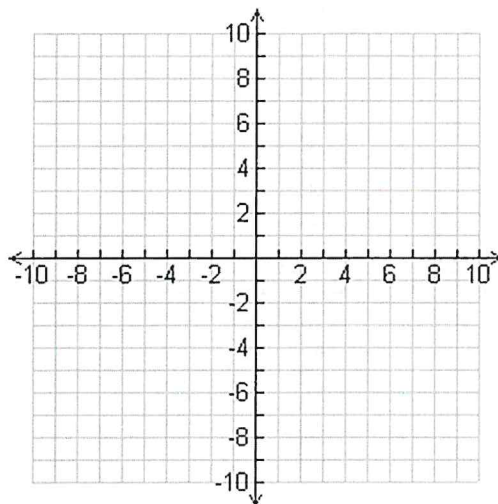
33. $y = x + 4$

Unit 4: Systems

Solve each system by graphing:

34. $7x - 2y = 16$

   $x + y = 1$

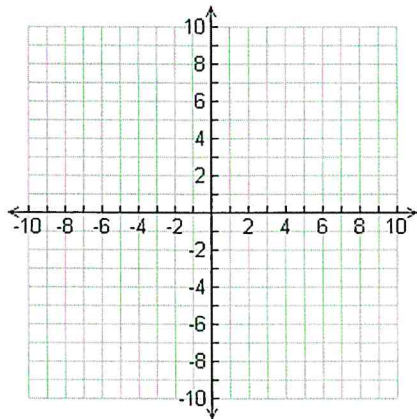35. $y = -\frac{5}{7}x + 3$

   $y = \frac{3}{7}x - 5$

Solve one of the System of Linear Equations by substitution and the other by elimination:

36. $-6x + 7y = 5$	37. $18x - 3y = 8$
$\quad\ \ 8x - 9y = -9$	$\quad\ \ y = 6x + 3$

Sketch the graph of the Linear Inequalities:

38. $10x + y \geq 5$	39. $y \leq -\frac{1}{3}x + 2$
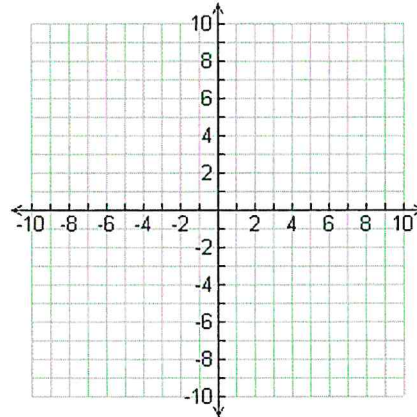
Sketch the solution to the system of Inequalities:

40. $16x + 5y < 40$	41. $y > \frac{2}{5}x + 3$
$\quad\ \ 4x + 5y > -20$	$\quad\ \ y \leq -\frac{4}{5}x - 3$