Math Homework, due Friday 10/31 when class begins.

First and Last Name _____

Express the following in slope-intercept form. **SHOW YOUR WORK**

slope intercept form: $y = mx + b$

1. $2x + 5y - 9 = 0$

2. $4x + \frac{1}{2}y + 10 = 2$

3. $\frac{1}{2} + 7x + x - 2x + 3y = \frac{3}{4}$

Express the following in point-slope form. **SHOW YOUR WORK**

point-slope form: $(y - y_1) = m(x - x_1)$

4. *Point:* $(2, 3)$ *Slope:* 4

5. *Point:* $(-1, -1)$ *Slope:* $\frac{3}{2}$

6. *Point:* $(2, -2)$ *Slope:* 1

On separate graph paper, graph the following points, then find the midpoint and distance.

$$\text{mid-point formula: } \left(\frac{(x_1+x_2)}{2}, \frac{(y_1+y_2)}{2}\right)$$

$$\text{distance formula: } d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

7. $(0, 0)$ *and* $(6, -6)$

8. $(-1, 5)$ *and* $(2, \frac{15}{3})$

9. $(3, -4)$ *and* $(\frac{12}{2}, \frac{1}{3})$

Use the Distributive Property to solve the following problems:

10. $4(x + 2) =$

11. $(2 + 3)(4x + \frac{1}{3}) =$

12. $3(2x + 3 - 4x) =$

Combine like terms:

13. $x + 3x + 5 =$

14. $-4y + 5x + 2 - \frac{3}{4} + 3y - x =$

15. $\frac{(x-x+y+3y-4-4y)}{(2-5+3x)} =$

Simplify the following expressions:

P.E.M.D.A.S.: Parenthesis, Exponents, Multiplication, Division, Addition, Subtraction

16. $2x(4^2 - x) =$

17. $(5x)^2 - 5 \times 2 + 4 - 8 \div 4 =$

18. $4 \times 4 + 4 \div 4 - (-4^2 + 17) =$

19. $\frac{(3x+3^2)+6\div 2-3\times 2}{3x}$

20. $(a + b)(a + b) =$

(we did this one in class, remember to use the distributive property)

Write the verbal sentence as an equation or inequality:

21. *Four times the quantity three more than a number n is twelve.*

22. *Six less than the sum of a square of a number x and 18 equals 20.*

23. *The product of 7 and a number r is less than or equal to forty-nine.*

24. *Eight multiplied by twelve divided by a number n is less than or equal to three hundred forty.*

25. *The area of a circle is equal to three squared times pi.*