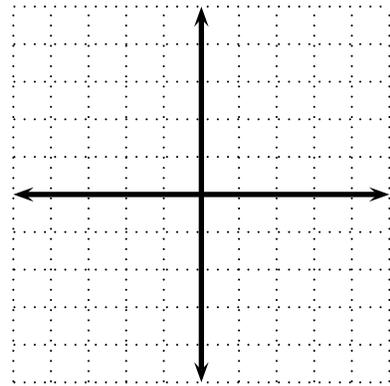


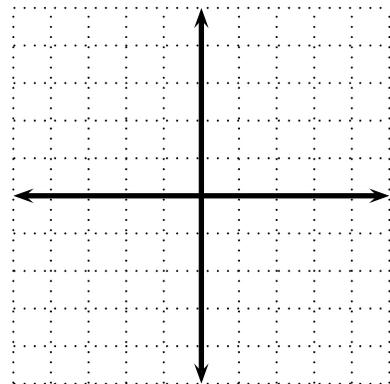
**Directions for the test will be:** No calculators may be used. Be sure to *show ALL of your work*. Depending on the problem, you may receive **NO CREDIT** if no work is shown even if the answer is correct. Don't take that chance. If your answer is a fraction, reduce it to lowest terms. If there is a blank, write your answer in the blank, otherwise **circle your answer**. **Keep this test** to study from for the final exam. You may use scratch paper, but if you do you must copy all work over on to this test paper. Scratch paper will not be graded.

**Graph the line represented by the equation.**

1.  $y + 2 = 2(x + 1)$



2.  $y - 1 = \frac{-3}{5}(x - 5)$



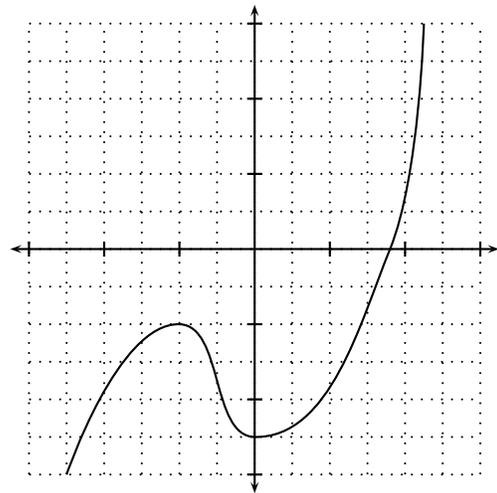


Use function notation to find the values. Be sure to label your answers clearly.

7. Given that  $f(x) = 2x^2 - 2x$ , find  $f(-2)$  and  $f(3)$

Find the requested values involving functions.

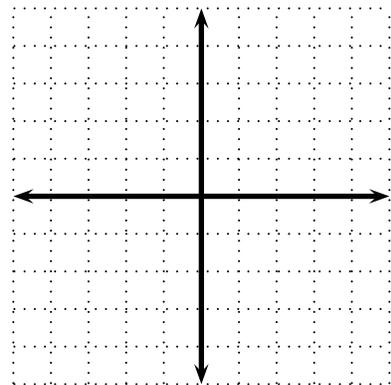
8. Given the graph below, find  $f(0)$  and find the value of  $x$  when  $f(x) = -2$



Graphing Inequalities

9. Graph the inequality: (4 points)

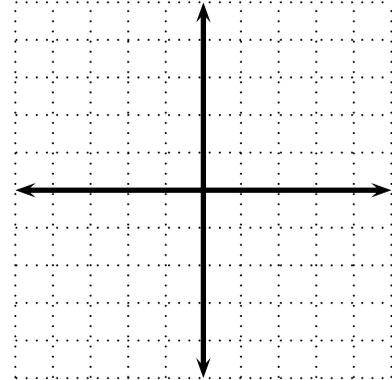
$$x - 2y < 4$$



10. Graph the system of linear inequalities:

$$x + y > 5$$

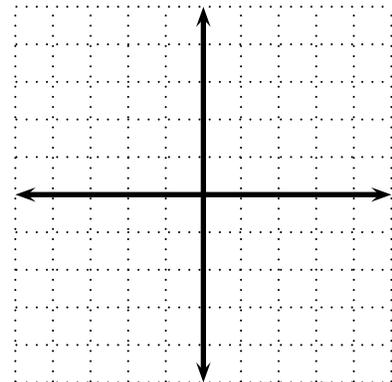
$$y \leq x + 3$$



11. Graph the system of linear inequalities:

$$x < 4$$

$$x + 2 \geq -3$$



**Simplify each of the following using laws of exponents. Do not leave negative exponents in your answer.**

12.  $\frac{-x^{-12}y^7}{-2x^{-4}y^{-6}}$

13.  $\frac{1}{w^{-8}}$

14.  $\left(\frac{3x^4}{-12x^{-8}}\right)^{-2}$

15.  $x^2x^{-8}$

16.  $(3a^5b^4)^3(2xy^7)$

17.  $\left(\frac{-1}{c}\right)^{-1}$

Perform the requested operations on the polynomials.

18.  $\left(x + \frac{2}{3}\right)^2$

19.  $(2x - 7)(2x + 7)$

20.  $(10x - 3)(11x + 5)$

21.  $(x + 5)\left(x^2 - 3x + \frac{1}{5}\right)$

$$22. (2x - 3) - (4x + 5)$$

$$23. (x^2 + 3x + 1)(5x^2 - 4x + 3)$$

$$24. (c^2d + 5c^5)(cd^4 - 2d)$$

$$25. (-4x^2 - 3x - 14) - (-5x^2 - 14x - 3)$$

$$26. (6x^2 - 7x - 21) \div (2x - 5)$$

$$27. (x^3 - 8) \div (x - 2)$$

**Answer the questions about the polynomials below.**

28. Write the polynomial in descending powers of  $x$  and give its name:  $4x + 5x^2 - 3x + 4$

29. What is the degree of the polynomial above?

30. What is the degree of  $-12x^2y^5z + 17xy^9 - 11xyz^{12}$ ?

**Factor each of the following completely.**

31.  $x^2 - 2x - 48$

32.  $-4x + 20$

33.  $x^2 + 5x + 4$

34.  $12x^5y^3 - 15x^2y^7 + 30x^6y^4$

35.  $w(x + 7) + 3(x + 7)$

36.  $x^3 - 4x^2 + 5x - 20$