

**MATD 0390 - INTERMEDIATE ALGEBRA –MIKE HUFF Test 1 Spring 2009**

Name \_\_\_\_\_

Write the answers to problems 1 and 2 using positive exponents only:

1.  $\left(\frac{x^3}{-3y^{-4}}\right)^3$

2.  $(3x^{-2}y^3)^{-3}$

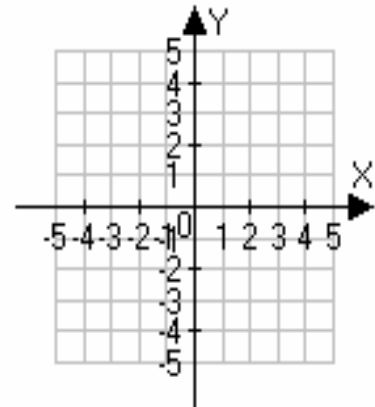
3. If  $a = 1$ ,  $b = -3$ , and  $c = -4$ , evaluate  $\frac{-b - \sqrt{b^2 - 4ac}}{2a}$ .

4. Find the intercepts of the following linear equation, and graph the line:  
 $6x - 3y = 12$

x - intercept \_\_\_\_\_

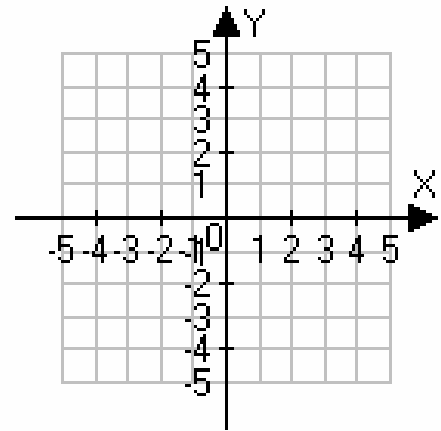
y - intercept \_\_\_\_\_

What is the slope of the line? Slope = \_\_\_\_\_



5. Find the slope of the following linear equation, and graph the line:  $y = 3$

Slope \_\_\_\_\_



6. Find an equation for the line containing the point  $(-5, 8)$  and having slope  $m = 3$ .

7. Solve the following system of linear equations:

$$\begin{aligned}x - 8y &= 19 \\ 2x + 6y &= -8\end{aligned}$$

8. Solve for  $y$  :  $ax + by = cy$
9. Brandi purchased a new car. What was the cost of the car before tax if the total cost including a 7% tax was \$19,260?
10. Find the measures of two complementary angles if the larger of the two angles is  $15^\circ$  more than two times the smaller angle.
11. Texas Coffee Traders mixes Ethiopian coffee worth \$16 per kg with a more expensive Columbian coffee worth \$21 per kg. How much of each type of coffee should be used to make 240 kg of mixture worth \$17 per kg?

12. Simplify:  $4(2x - 8) - [6(1 - 4x) + 9]$

13. Solve:

$$\frac{1}{3}x + \frac{2}{5} = \frac{4}{15} + \frac{3}{5}x - \frac{2}{3}$$

14. Translate to an algebraic expression:

Four less than twice the sum of five and a number.

15. The perimeter of a rectangle is 90 inches. Its length is 5 inches more than its width. Find the length and the width.

16. Let  $f(x) = -x^2 - 2x + 1$ , find  $f(-3)$

17. If  $f(x) = 3x - 2$  and  $g(x) = x^2 - 3x - 4$  find the following:

a.  $(f + g)(2)$

b.  $(f - g)(-3)$

c.  $(fg)(2)$

d.  $\left(\frac{f}{g}\right)(-1)$

18. Find the domain of the function  $f(x) = \frac{x + 3}{x - 2}$

19. Match the formula to its correct name:

\_\_\_  $y = mx + b$

\_\_\_  $m = \frac{y_2 - y_1}{x_2 - x_1}$

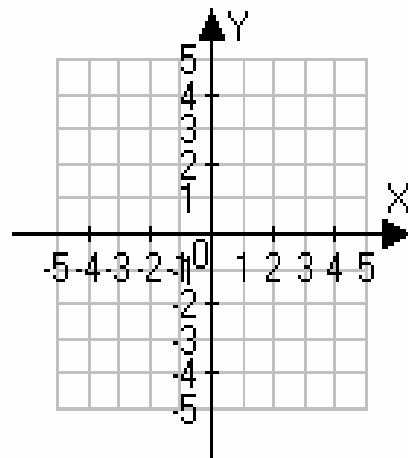
\_\_\_  $y - y_1 = m(x - x_1)$

\_\_\_  $x = a$

\_\_\_  $y = b$

- A. Slope
- B. Standard Form
- C. Point-Slope
- D. Slope-Intercept
- E. Point-Intercept
- F. General Form
- G. Horizontal Line
- H. Vertical Line

20. Graph the function:  $f(x) = -\frac{3}{2}x + 2$



21. a. Find the slope of the line through the points  $(-2, 3)$  and  $(-5, -6)$ .

b. Find the slope-intercept equation of the line through the points  $(-2, 3)$  and  $(-5, -6)$ .

c. Find the function of the line through the points  $(-2, 3)$  and  $(-5, -6)$ .

22. Find the slope-intercept equation of the line through the point  $(-2, 3)$  that is

a. parallel to the line  $-2x + 4y = 8$

b. perpendicular to the line  $-2x + 4y = 8$