

Name _____

Test 3
Elementary
Algebra
MATD 0370
Mike Huff
Spring 2010

Tools: Calculator and scrap paper.
Deadline: 4/15/2010

Please show all work on the test paper for partial credit.

(5 points)

1. Simplify: $\left(\frac{5}{3} - \frac{1}{2}\right)^2 \div \left(\frac{1}{2} - \frac{1}{4}\right)^2$

(8 points)

2. Simplify:

a) $x^6 \cdot x^{-3}$

b) $\frac{x^{-6}}{x^3}$

c) $(x^2y^{-3})^4$

d) $\left(\frac{x^9y^{-7}}{x^3y^2}\right)^{-1}$

(15 points)

3. Factor completely:

a) $5x^3y + 10x^2y^2 + 25xy^3$

b) $2x^3 + x^2 + 6x + 3$

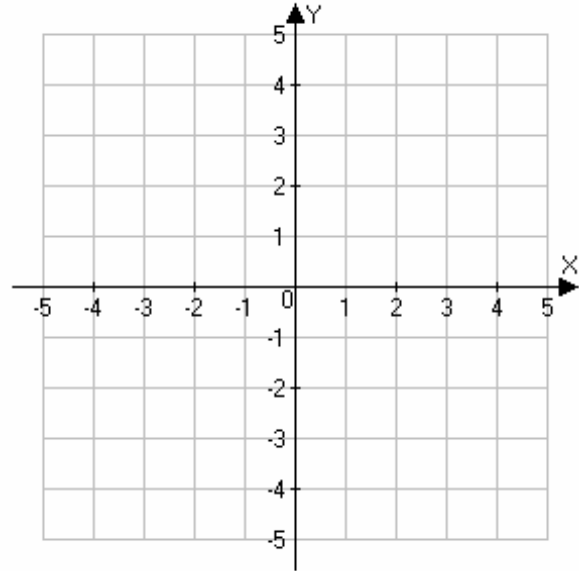
c) $x^3 + 10x^2 + 25x$

d) $2x^2 - x - 6$

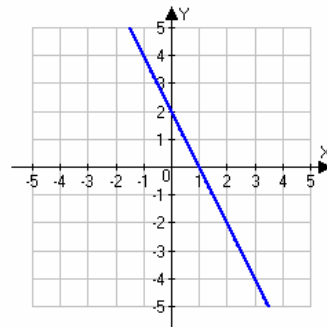
e) $49x^2 - 16y^2$

(8 points)

4. a. Graph: $6x - 4y = 12$
- b. The x -intercept is _____
- c. The y -intercept is _____
- d. The slope of the line is _____

**(4 points)**

5. Find the equation of the line whose graph is shown.

**(3 points)**

6. For the polynomial: $\frac{5}{2}x^7 + 3x^5 + 2x^3 - 1$. Find the following:

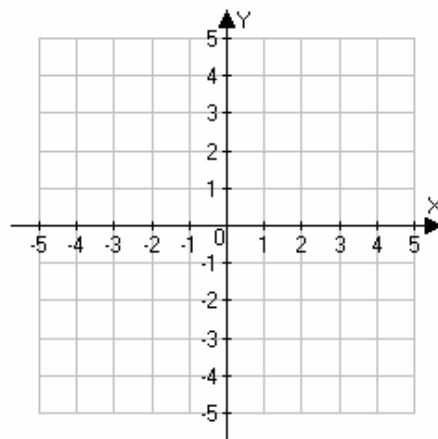
- a) The leading term _____
- b) The leading coefficient _____
- c) The degree of the polynomial _____

(6 points)

7.

a) Find the slope of the line containing the pair of points $(-2, -3)$ and $(3, 4)$.b) Find the point-slope equation of this line.

(4 points)8. Solve the equation: $5(x - 2) - [x - (2x + 5)] = 3$

(4 points)9. Graph: a. $x = -2$
b. $y = 2$ 

(6 points)

10. Perform the indicated operation:

a. $(-5x^3 + 4x^2 + 2x - 1) + (-7x^3 - 2x^2 + 4x + 2)$

b. $(-4x^3 + 3x^2 + 2x - 1) - (-7x^3 - 2x^2 + 4x + 2)$

(9 points)

11. Multiply the following polynomials:

a) $-2x^2(-3x^2 - 2x + 1)$

b) $(x + 3)(x - 5)$

c) $(3x^2 + 2x - 4)(3x + 2)$

(4 points)

12. Divide: $(21x^3y^4 + 3x^2y^2 - 7xy) \div (-7xy)$

(4 points)

13. Bill's bill for computer supplies came to \$160.50. If the bill included 7% sales tax, what was the cost of the merchandise that Bill purchased?

(4 points)

14. Two angles are complementary. Find the measures of the angles if the larger of the two angles is 10° less than four times the smaller angle.

(4 points)

15. After a 35% discount, a new car stereo was selling for \$230.75. What was the original price of the car stereo?

(4 points)

16. The second angle of a triangle is three times as large as the first. The third angle is 40° more than the second angle. What is the measure of each angle?

(4 points)

17. Solve $x^2 - 4x - 21 = 0$

(4 points)

18. Solve $x^2 + 6x - 9 = 0$