

**Name** \_\_\_\_\_

Test 3  
Elementary Algebra  
MATD 0370

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Spring 2004

Deadline: 4/22/04

Tools: Any calculator and scrap paper.

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

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

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2. Simplify:

a)  $x^5 \cdot x^2$

b)  $\frac{x^5}{x^2}$

c)  $\frac{x^7 y^5}{x^5 y^4}$

d)  $(x^5)^3$

3. A factor completely

a)  $x^3 + 14x^2 + 49x$

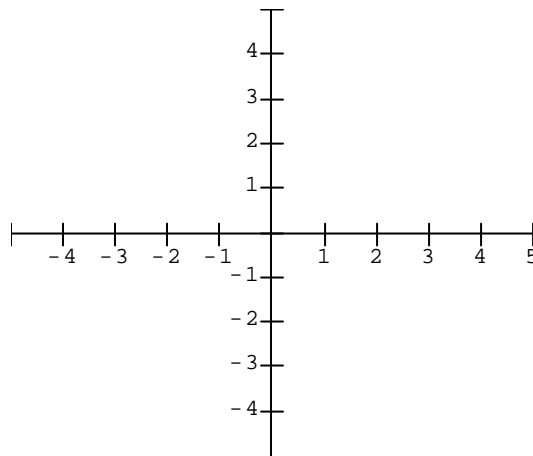
c)  $x^3 + 4x^2 - 9x - 36$

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

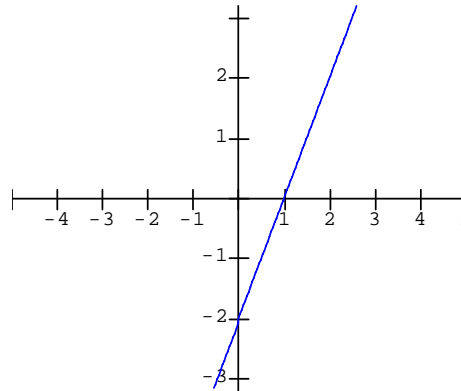
d)  $16x^2 - 9y^2$

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4. Graph:  $2x - 3y = 6$



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



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6. For the polynomial :  $-4x^3 + 3x^2 + 2x - 1$  . Find the following:

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

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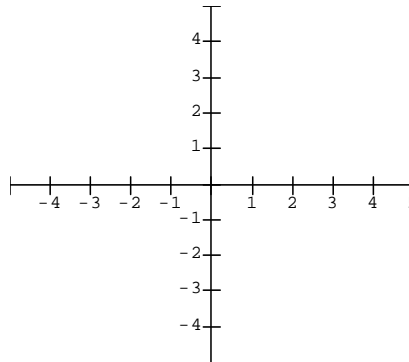
7.

- a) Find the slope of the line containing the pair of points  $(-2, 4)$  and  $(6, 4)$  .
- b) Find the equation of this line.

8. Solve the equation:  $3(x - 1) - 2[x - (2x + 7)] = 2$

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9. Graph:  $x = 4$



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10. Add the following polynomials:

$$(-4x^3 + 3x^2 + 2x - 1) + (2x^3 - 2x^2 - 7x + 15)$$

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11. Subtract the following polynomials:

$$(-3x^3 + 2x - 1) - (x^3 + 5x^2 - 6x + 5)$$

12. Multiply the following polynomials:

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

b)  $(x + 3)(x - 4)$

c)  $(-3x^3 + 2x - 1)(x^3 + 5x^2 - 6x + 5)$

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13. Divide:  $(3x^2 - 2x - 13) \div (x - 2)$

14. Mike's bill for computer supplies came to \$98.70. If the bill included 5% sales tax, what was the cost of the merchandise that Mike purchased?

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15.

Two angles are complementary. Find the measures of the angles if the larger of the two angles is  $15^\circ$  more than two times the smaller angle.

16. After a 32% discount, a new car stereo was selling for \$170.00. What was the original price of the car stereo?

17. The second angle of a triangle is three times as large as the first. The third angle is  $30^\circ$  more than the first angle. What is the measure of each angle?

18. Two angles are complementary. Find the measures of the angles if the larger of the two angles is  $15^\circ$  more than two times the smaller angle.

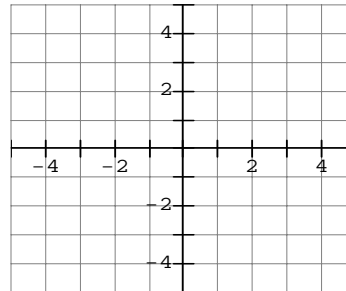
19. After a 32% discount, a new car stereo was selling for \$170.00. What was the original price of the car stereo?

20. The second angle of a triangle is three times as large as the first. The third angle is  $30^\circ$  more than the first angle. What is the measure of each angle?

21. Graphing by plotting points. Sketch a graph of the following equations by making a table of values and plotting the points

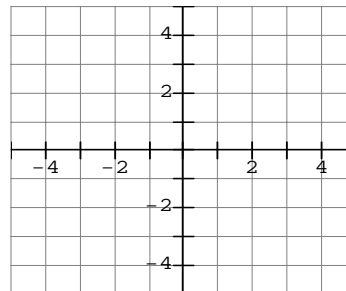
a)  $y = -\frac{1}{2}x + 2$

$x$	$y$
0	0

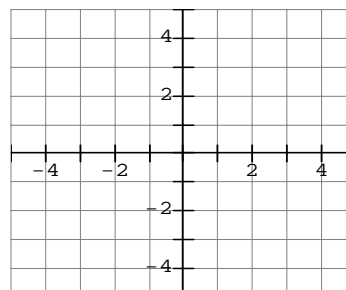


b)  $4x + 3y = -12$

$x$	$y$
0	0



c)  $y = -\frac{5}{2}x + 3$



22. Solve  $x^2 - 7x + 10 = 0$

23. Solve  $x^2 - x - 12 = 0$

24. Solve  $2x^2 + 5x + 2 = 0$