

MONTGOMERY COUNTY COMMUNITY COLLEGE
MAT 100 -Test #1
Spring 2005

Graziano

Name _____

Make sure you show all work! No credit will be given if no work is shown

1. Simplify each expression using the order of operations. (3pts each)

a. $\frac{(-5)(-2)^3}{4}$

b. $4[3 + 2(7 - 4)]$

2. Solve for x: (4 pts each)

a. $7x - 2(x - 1) = 15 + 3x$

b. $5x + 3y = H$

3. Find the slope and y-intercept in the line $4x - 3y = 5$

slope = _____ (4 pts)

y-intercept _____ (4pts)

4. Given the points $(3, -5)$ $(8, -9)$, find the equation of the line joining them. You must leave your answer in slope-intercept form. (5 pts)

5. State whether the two lines below are parallel, perpendicular, or neither. (5 pts)

$$y = 5x + 2$$

$$-\frac{1}{5}x - 5y = 8$$

6. a. Draw the graph of $5x - 3y = 15$. (4pts)
Please show at least 2 points you used to draw the line.

- b. Draw the graph of $x = 7$
Its slope is _____(4pts)

7. A firm pays \$1820 for rent plus \$115 for every item it manufactures. Let x be the number of items.

a. Write an expression for the Cost $C(x)$ of manufacturing x items.(4 pts)

$$C(x) =$$

b. What does it cost to manufacture 10 items?(4pts)

8. Choose the one alternative that best completes the statement or answers the question. Use a graphing calculator to determine which window best shows the shape of the graph and where it crosses the x - and y -axes.(3pts)

$$y = 6x - 12$$

a. [-20, 20, -20, 20], Xscl = 5, Yscl = 5

b. [-10, 10, -10, 10], Xscl = 1, Yscl = 1

9. Use the rules for exponents to simplify the following. No negative exponents in the answer.(4pts each)

a. $(3x^2)(2x^0)$

b. $(-3x)^2$

c. $\left(\frac{2x^3y^{-3}}{y^2}\right)^2$

10. Find the equation of the line that is parallel to the graph of $y = 4x + 8$ and passes through the point $(5, 3)$. (5pts)

The equation is _____

11. Given: $F(x) = 3x^2 - 4x + 1$ (4pts each)

Find:

a. $F(2)$ = _____

b. $F(0)$ = _____

12. Go to page 90 in your textbook. do problem #16. DO NOT COPY THE FIGURE.

Enter your answers to a, b, c, d on the lines below. (4 pts each)

a. _____

b. _____

c. _____

d. _____

13. The following table shows increase in US Healthcare expenditures (in billions of dollars).

Year	Expenditure (in billions)
1998	422.6
1999	454.8
2000	494.1
2001	546
2002	602.8
2003	666.2

Remember to code the years as shown in Example 6 on page 154.

a. Use linear regression to find a linear function that can be used to estimate the sales as a function of x years since 1998. (5pts)

b. Predict the sales in the year 2005. (3pts)
