

**MATH 097 FINAL**  
**Winter 2005 Form B**

Name \_\_\_\_\_ Instructor \_\_\_\_\_ Score \_\_\_\_\_

1. Find the value of:  $\frac{5^2}{7} - \frac{1}{14}$   
(Write your answer as a simplified fraction.)  

1. \_\_\_\_\_ (3)
2. Write .24 as a simplified fraction.  

2. \_\_\_\_\_ (3)
3. A baseball player had 11 hits in fifty times at bat.  
What percent were hits?  

3. \_\_\_\_\_ (3)
4. Simplify:  $(7 - 4)^2 - \sqrt{64} \div 4$   

4. \_\_\_\_\_ (3)
5. Solve:  $6x - 3 = 27$   

5. \_\_\_\_\_ (3)
6. Solve:  $-3(5y - 2) = 4(2 - 3y) + 10$   

6. \_\_\_\_\_ (3)
7. Simplify the following:  
$$\frac{36x^5y^7}{4xy^4}$$
  

7. \_\_\_\_\_ (3)
8. a. Express .00517 in scientific notation.  

8a. \_\_\_\_\_ (3)

  
b. Write  $4.23 \times 10^3$  in expanded form.  

8b. \_\_\_\_\_ (3)
9. Frank bought his new ski jacket on sale for 41% off the regular price P.  
Write an expression for the amount he saved because he bought the jacket  
on sale.  

9. \_\_\_\_\_ (3)
10. Simplify:  $(5x^2 - 3x + 4) - (7x^2 + 5x - 3)$

10. \_\_\_\_\_(3)
11. Multiply and simplify:  $(3x - 2)(5x + 4)$
11. \_\_\_\_\_(3)
12. Simplify:  $\frac{(b^{-4})^{-2}(b^3)^0}{(b^3)^2}$
12. \_\_\_\_\_(3)
13. Simplify:  $\frac{75x^4 - 50x^5}{25x^3}$
13. \_\_\_\_\_(3)
14. Factor:  $x^2 - 36$
14. \_\_\_\_\_(3)
15. Factor completely:  $5x^2 - 5x - 30$
15. \_\_\_\_\_(3)
16. Solve for x:  $x^2 - 11x + 30 = 0$
16. \_\_\_\_\_(3)
17. Solve for a:  $b^2 + 36 = 12b$

18. Evaluate  $x^2 - 3xy$  when  $x = -5$  and  $y = 2$ . 17. \_\_\_\_\_(3)

19. Is  $(2, -3)$  a solution of  $5 - xy = 11$ ? (SHOW WORK!) 18. \_\_\_\_\_(3)

20. What are the  $x$  and  $y$  intercepts of  $5x - y = 9$ ? 19. \_\_\_\_\_(3)  
Write your answers as ordered pairs.

20. x-intercept ( , )  
y-intercept ( , ) (4)

21. My father was a farmer and the rabbits were bothering his crops. He decided to fence a rectangular area to keep them out. One side of the area (a length) was already fenced. If the length needed to be 700 feet more than the width and he wanted to use exactly 4300 feet of fencing for the three sides, what were the three dimensions of the fenced rectangle?

21. \_\_\_\_\_(4)

22. The monthly profit since Ms. Fairbanks became CEO of Oxnard Lumber, can be calculated using:  $P = 8,000 - 200t$   
where  $P$  is the monthly profit in dollars and  $t$  is the number of months since she became CEO.

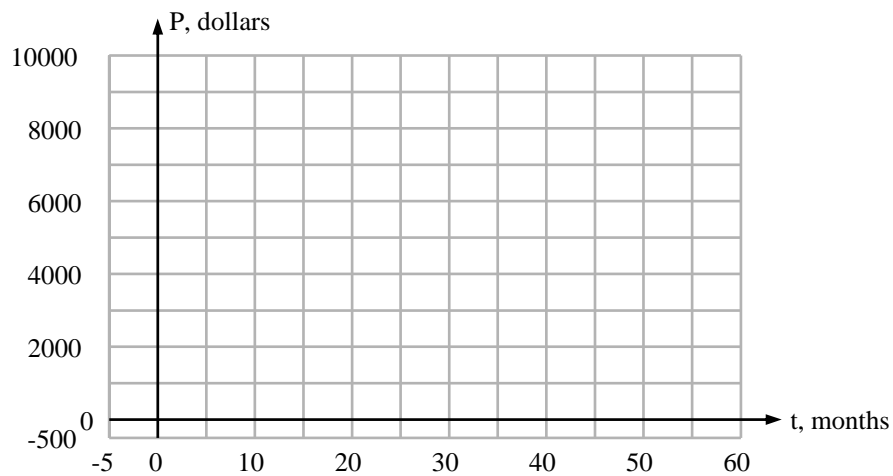
- a. Use the formula to fill in the missing numbers in the table. (3)

t, months	P, dollars
0	
10	6000
15	
	3000
30	2000

- b. What was the monthly profit ten months after she became CEO?

22b. \_\_\_\_\_ (3)

- c. Graph the ordered pairs from the table on the coordinate system given below and draw the line that connects them. (3)



- d. Calculate the slope of the line.

22d. \_\_\_\_\_ (3)

- e. What does the slope of the line mean in this context?

22e. \_\_\_\_\_ (3)

23. The total cost,  $C$ , (in dollars) of manufacturing  $x$  DVD's is given by the equation:  $C = 21 + 4x - x^2$

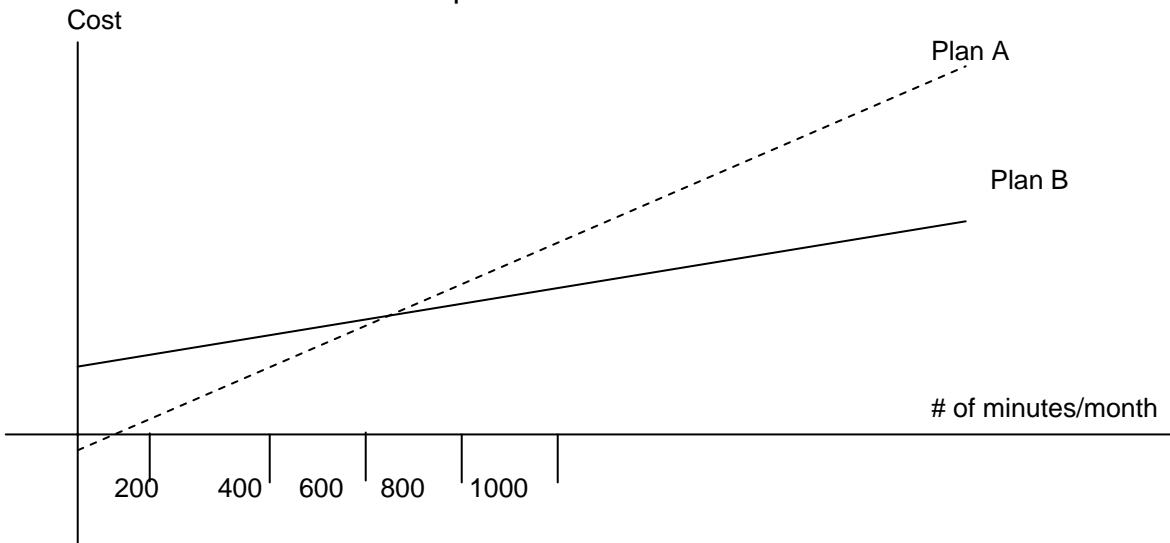
- a. What will be the total cost for manufacturing 4 DVD's?

- b. How many DVD's can we manufacture if we have \$16 available?

23a. \_\_\_\_\_(3)

23b. \_\_\_\_\_(3)

24. Martha has been comparing prices from two wireless phone companies, Verizon Wireless and Cingular. She wants to make a decision about which one is cheaper. The following graph represents the monthly cost of the two phone providers, depending on the number of minutes per month she uses her phone.



- a. Determine from the graph for how many minutes the cost of the two providers would be the same.

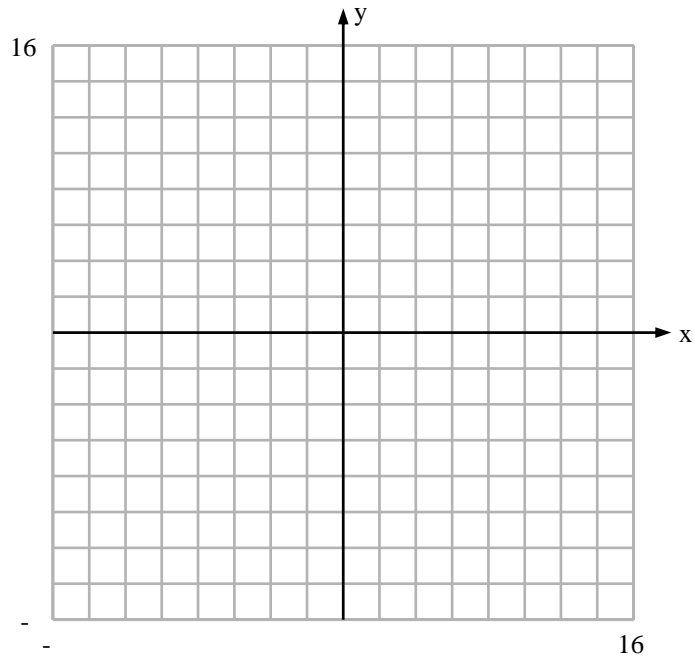
24a. \_\_\_\_\_(3)

- b. Which plan would be better if Martha usually spends 900 minutes per month on the Internet?

24b. \_\_\_\_\_(3)

25. Solve the following system by graphing:

$$\begin{cases} 3x + 2y = 6 \\ y = -x + 4 \end{cases}$$



25. Solution: \_\_\_\_\_(5)