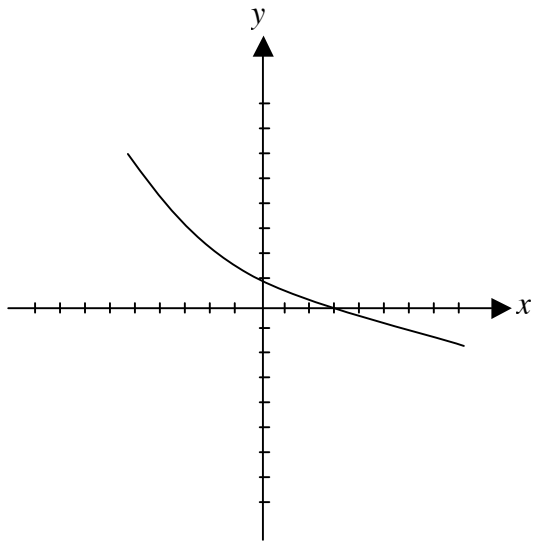
Math 111 Exam 2 Fall 2002

ANSWER KEY

Name: _____

Place your answer in the spaces provided. You must show your work to receive credit.

(6 pts) **1**. Find the range of this function.



$[-2, 6]$

(8 pts) **2** Let $g(x)=\dfrac{2x+5}{x-4}$ Find $g(x+1)$.

$\dfrac{2x+7}{x-3}$

(8 pts) **3**. The weight, in pounds, of the average male baby is given by the function $W(t) = 1.2t + 7.5$ where t is the age in months.

(4 pts) (a) What does the number 7.5 signify? (Write your answer as a complete sentence.)

The number 7.5 signifies the weight at birth or zero months.

(4 pts) (b) What does the number 1.2 signify? (Write your answer as a complete sentence.)

The number 1.2 signifies an increase in weight of 1.2 pounds per month.

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(6 pts) **4**. Find the x-intercept for $3x + 12 = 4y$.

$(-4, 0)$

(8 pts) **5**. Find the slope-intercept form of the line that contains the point (2, 6) and has slope $m = \frac{1}{3}$.

$y = \frac{1}{3}x + \frac{16}{3}$

(12 pts) **6**. Lauren's cell phone bill was \$25.00 for a month in which she used 30 minutes of airtime. The bill was \$35.00 when she used 50 minutes.

(8 pts) (a) Find a linear function that expresses the monthly cost as a function of the number of minutes. (Name the variables and write the function.)

$C = .50x + 10.00$

(4 pts) (b) Use your function from part (a) to determine the monthly cost when 45 minutes of airtime are used.

\$ 32.50

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(10 pts) **7**. Let $f(x) = x^2 + 1$ and $g(x) = 2x - 5$.

(5 pts) (a) Find $f\left(\frac{1}{2}\right) / g\left(\frac{1}{2}\right)$.

$-\frac{5}{16}$

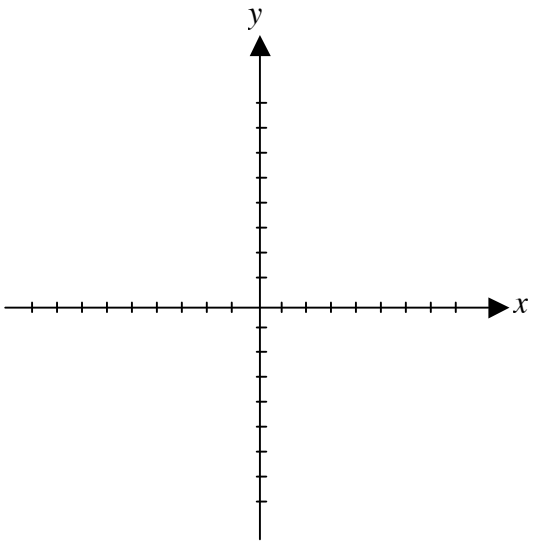
(5 pts) (b) Find $(f + g)(-3)$.

-1

(12 pts) **8**. Graph the following equations. Use your graphs to find the solution of the system. Write your solution in the form of an ordered pair(s).

$y = -3$

$x + y = 4$



$(7, -3)$

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(8 pts) **9**. Find the slope of any line perpendicular to $8y - 2x = 5$.

-4 *or* $-\frac{4}{1}$

(10 pts) **10**. Solve using the substitution method. Express your answer as an ordered pair.

$$a = 4b + 1$$
$$3a + 2b = 10$$

$\left(3, \frac{1}{2}\right)$

(12 pts) **11**. On Saturday night, 480 people attended the senior class play. Tickets were \$3 for the general public and \$2 for students. If \$1140 was taken in by the box office that night, how many of each kind of ticket were sold? (Name the variables, set up equation(s), and solve.)

student= 300

general= 180