Makeup Math 1710 Test 2

Name: Chapter 2 Spring 2007 Score

Show work in each problem as much as possible to earn full credit. Each question is 10points.

1. In 1990 the number of births per 1000 people in the United States was 16.7 and decreasing at 0.26 birth per 1000 people each year.

a. Write a formula for the linear function f that models the birth rate x years after 1990.

b. Estimate the birth rate in 2002.

2. Find the slope – intercept form for the line with y-intercept 45 and x-intercept 90.

3. Find the point-slope form for the line parallel to $y = 4x + 16$ and passing through $(-4, -7)$.

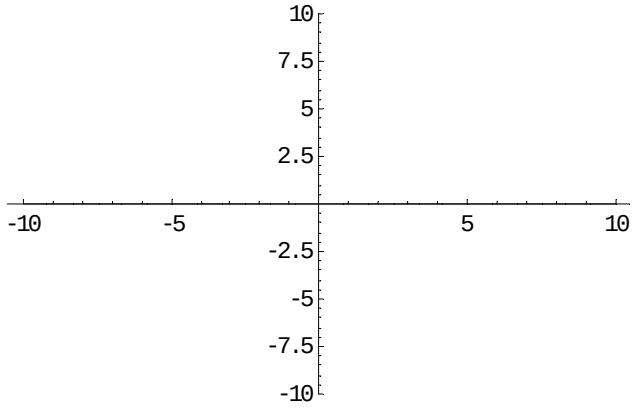
4. Find the slope – intercept form for the line perpendicular to $y = 4x + 16$ and passing through $(-4, -7)$.

5. Solve the given equation.

$$\frac{x-5}{3}+\frac{3-2x}{2}=\frac{5}{4}$$

6. Use the x-intercept method of graphical solution to solve the given equation.

$x+4=1-2x$



7. The per capita (per person) income from 1970 to 2000 can be modeled by $f(x)=604.8(x-1970)+2280$ where x is the year.

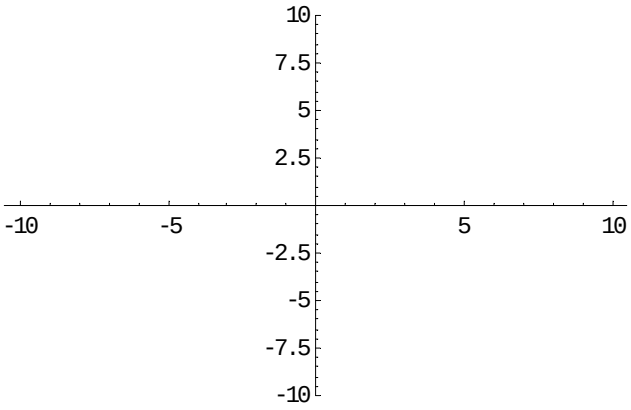
- Determine the year when the per capita income was $16,190.

8. Solve the given inequality and express the solution set in interval notation.

$$\frac{1}{2}\le\frac{1-2t}{3}<\frac{2}{3}$$

9. Let $f(x) = x - 3$ and $g(x) = \frac{x}{2} - 2$

a. Use your calculator to graph f and g in the window [10, 10].



b. Write down the solution set for the following in interval notation.

- $f(x) = g(x)$

- $f(x) \geq g(x)$

- $f(x) > g(x)$

10. Solve the given inequality

$|2x - 9| = |8 - 3x|$

11. Consider the following function and complete the given table.

$$f(x)=\begin{cases}2+x, & x<-4\\ -x, & -4\le x\le 5\\ 3x, & x>5\end{cases}$$

x	f(x)
-5	
-1	
3	
5	
10	

12. Graph the function in number (11) by hand.