

Name: _____

Math 100 Section G
Exam 1
Fall 2006

1. Fill in the function table for $f(x) = 2x^2 - 3x + 2$.

x	-2	-1	0	1	2
$f(x)$					

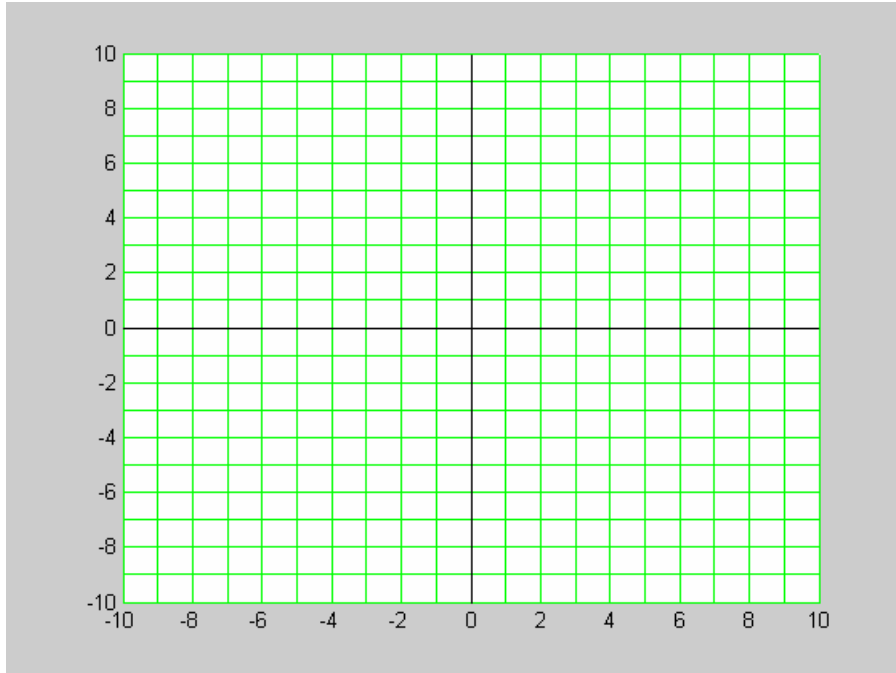
2. Evaluate $q(p) = \frac{A}{p-B}$ at $p = 5B$.

3. Solve for x : $4x + 5 = 2x - 3$

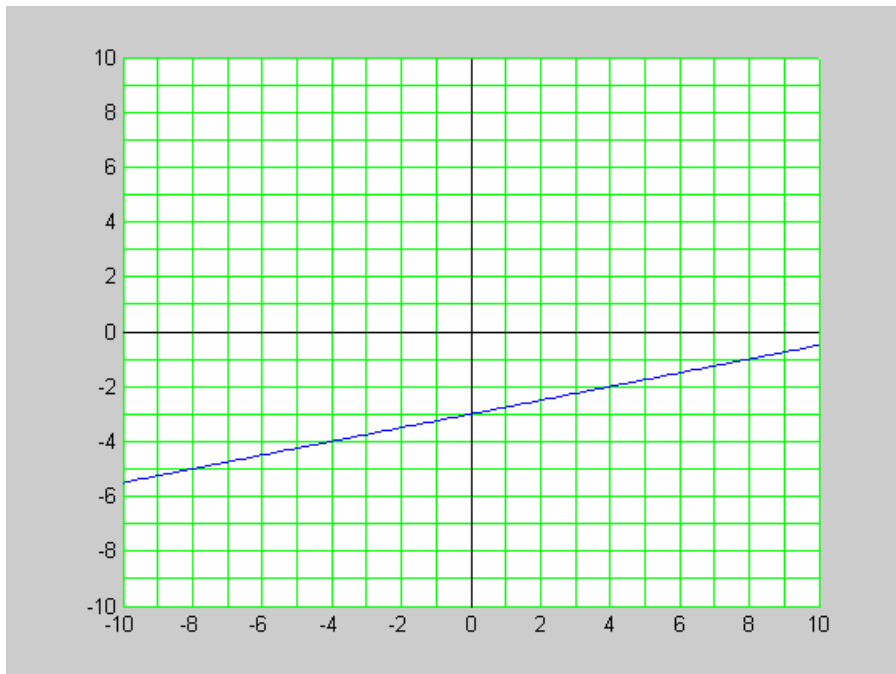
4. Suppose $x = 3$ solves $ax + 2 = 3x + a$. What is a ?

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5. Graph the line $4x + 3y = -9$.



6. What is the equation of the line shown in the following graph?



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7. Suppose a line passes through the points (2, 8) and (5, 14). What is another point on the line?

8. Simplify (solve) the inequality $x - 3 > 2 + 3x$

9. If possible, solve the system for x and y .
- $$\begin{aligned} -x - 2y &= -5 \\ 2x - 4y &= -6 \end{aligned}$$

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10. A business depreciates a new assembly plant using a straight-line depreciation over 15 years. If the initial value of the plant is \$4,500,000 and its value after 15 years will be 0, what is the depreciated value after 11 years?

11. Suppose sales S and price p are related by the equation $S = 36400 - 75p$. Faced with excess inventory, you wish to increase sales by 150 units. How will you need to change the price? (Yes you have enough information to answer this question).

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12. A farmer has 320 acres under cultivation. He has rights to 280 acre-feet of irrigation water. Suppose wheat requires 0.5 acre-feet of irrigation water per acre while soybeans require 2 acre-feet of irrigation water per acre. How many acres should the farmer plant with wheat and how many with soybeans to use all his land and all his water?

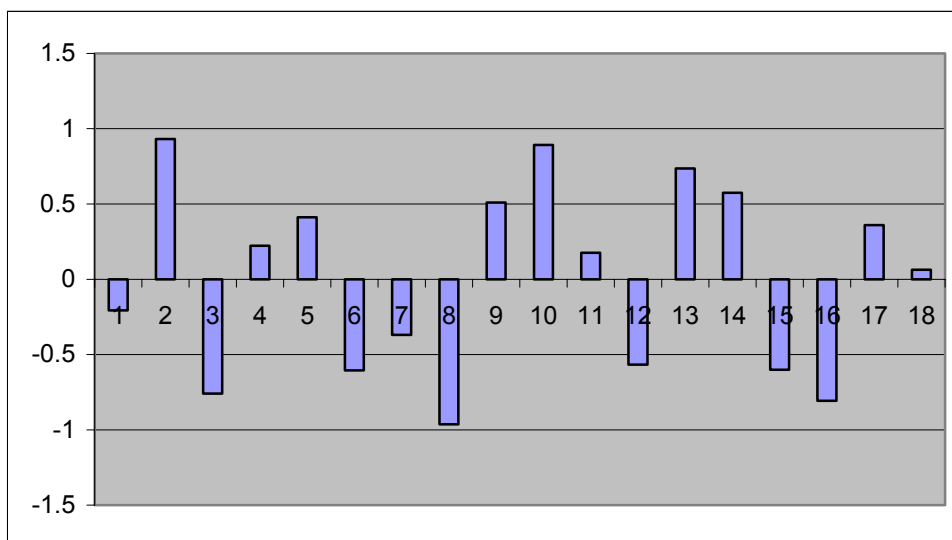
13. Suppose foreign auto sales in the U.S. between 1980 and 2005 are modeled by the function $y = 52,000x + 210,000$ where y is foreign auto sales and x is the number of years since 1980. In what year did foreign auto sales first exceed 750,000?

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14. The following table contains sales data where a new product was offered for sale at different prices in different markets. Is this a function table? **Explain** your answer.

<i>Price</i>	\$1.00	\$2.00	\$2.00	\$2.00	\$2.50	\$3.00	\$3.00	\$3.50	\$4.00
<i>Sales</i>	300	215	208	212	178	132	141	108	74

15. A linear model is developed to predict average weight as a function of age. Comparing the model values to the observed data leaves the following residuals. Based on these residuals, does a linear model appear to be a good choice for this data? **Explain** why or why not.



Name: _____

Pledge:

On my honor, as a student, I have neither given nor received unauthorized aid on this

examination: _____

(signature)

(date)