

**BRONX COMMUNITY COLLEGE**  
of The City University of New York  
**DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE**

Math 23 (nea)  
June 22, 2006

Final Exam  
2 hours

**Type Name:** \_\_\_\_\_

**Type Secret Name:** \_\_\_\_\_

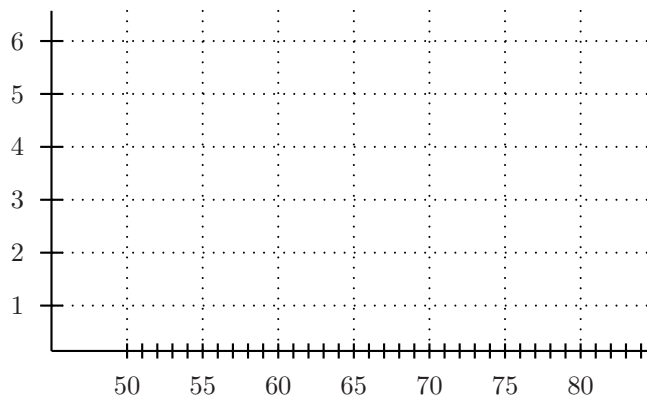
1. Consider the following set of data.

66 56 57 55 51 63 66 73 54 57  
67 64 77 53 59 57 67 54 55 78

(a) (100 points) Fill in the following frequency tale (use seven classes):

Classes	Class Midpoint	Tally	$f$

(b) (50 points) Make a histogram from the data in the first part:



2. (100 points) Calculate the mean, mode, median, first and third quartiles for the following data. Then draw a box-and-whisker plot.

37 29 30 26 25 21 23 27 22 29.

3. (100 points) Two fair dice are rolled. Find the probability that the sum is more than 5 but less than 8.

4. (100 points) A basketball player makes 70% of the free throws he shoots. If he tries 15 free throws what is the probability that he will make less than 7 throws?

5. (100 points) The scores on a test are normally distributed with a mean of 165 and a standard deviation of 40. Find the probability that a person scores more than 165.

6. Given the following paired data:

x	30	40	50	60	70	80
y	13	15	19	22	30	33

(a) (100 points) Compute the correlation coefficient  $r$ .

(b) (100 points) Find the equation of the least squares regression line.

(c) (50 points) Use the least square line to predict  $y$  if  $x = 45$ .

7. (100 points) The National Center for Educational Statistics surveyed 5400 college graduates about the lengths of time required to earn their bachelor's degree. The mean turned out to be 5.2 years, and the standard deviation is 1.7 years. Construct the 99% Confidence interval for the mean time required by the whole population of college graduates.

