

**BRONX COMMUNITY COLLEGE**  
**of the City University of New York**

**DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE**

MTH 23  
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Exam 1  
October 24, 2025

Name: \_\_\_\_\_

**Directions:** Write your answers in the provided space. To get full credit you *must* show all your work. Simplify your answers whenever possible. Be certain to indicate your final answer clearly.

1. (20 points) For the following sample

1      2      4      6

compute

(a) (5 points) The sample mean  $\bar{x}$ .

(b) (15 points) The sample standard deviation  $s$ .

2. (20 points) A survey found that 55% of all the regular customers in an ice cream shop like vanilla ice cream, and 80% like chocolate. Of those who like chocolate, 60% also like vanilla. If you walk into that store and encounter one of the regular customers what is the probability that

(a) (10 points) they like both chocolate and vanilla?

(b) (10 points) they like at least one of the flavors, chocolate or vanilla?

3. (20 points) For the following data:

12, 17, 17, 17, 33, 35, 38, 38, 42, 43, 45.

(a) (5 points) Find the mode.

(b) (10 points) Find the median, and the first and third quartiles.

(c) (5 points) What is the percentile rank of 38?

4. (20 points) In a stack of selves I have 500 books. They are either in English or in Greek, and their content is either Math, Non Fiction other than math, or Fiction. The number of the books according their language and their category is shown in the table below

	Math	Non-Fiction	Fiction	Total
English	150	100	30	280
Greek	100	50	70	220
Total	250	150	100	500

If I pick up a book at random from that stack of selves what is the probability that the book is

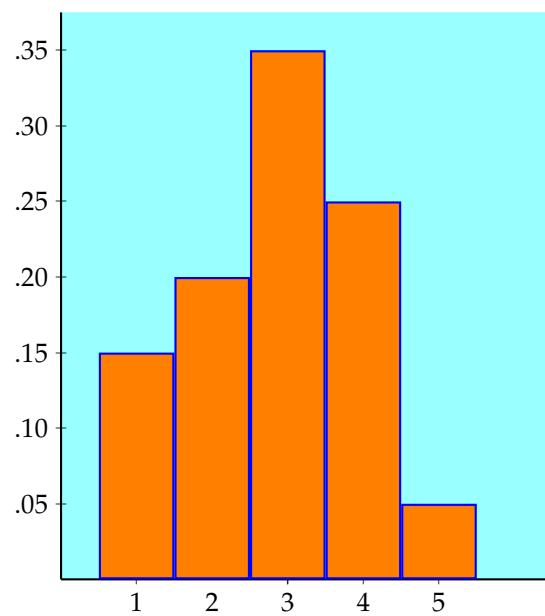
(a) (5 points) A Greek book.

(b) (5 points) A Math book.

(c) (5 points) A Greek book or a Math book.

(d) (5 points) Given that the book was Greek, what's the probability that it was a Math book?

5. (20 points) A box contains balls numbered 1 through 5 with relative frequency as shown below



(a) (7 points) A ball is drawn randomly from that box. What is the probability that its number is odd?

(b) (13 points) Given that the ball's number was odd, what is the probability that its number was 3?