

QR Review Sheet for 1st Hour Exam

1. The following is a list of commuting times (in minutes) for workers in downtown Boston:

35 20 25 40 60 30 50 75 60 50

- a) Calculate the mean and median for this data.
- b) Use the data to generate a histogram.
- c) Construct a 60-second summary, describing any patterns in the data.

2. The following frequency table shows the ages of students in a Quantitative Reasoning class.

Age interval	frequency
18 – 20	2
21 – 23	4
24 – 26	1
27 – 29	3
30 – 32	0
33 – 35	2

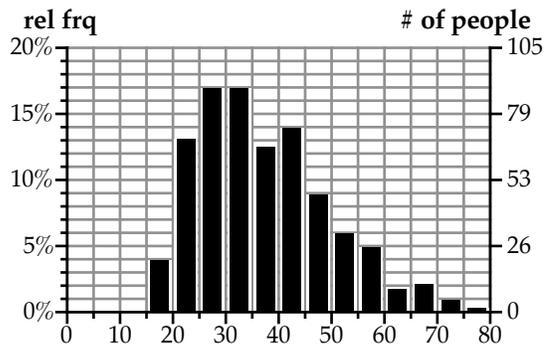
- a) Find relative frequencies.
- b) Use Excel to make a relative frequency histogram of this data.
- c) Estimate the mean age for this class.

3. Two histograms derived from US Census data are shown below. This random sample includes 1000 people of age 15 years and older.

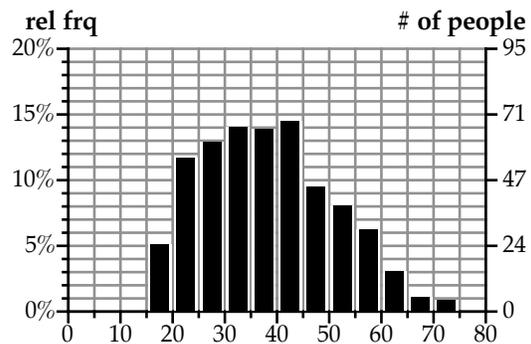
Distribution of Ages of Men

Distribution of Ages of Women

Use the histograms to approximate the following:



Age / Men / 526 elements
U.S. Census Data



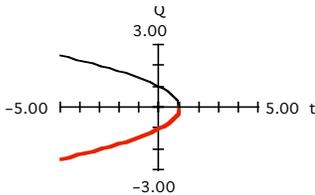
Age / Women / 474 elements
U.S. Census Data

- a) the number of men between the ages of 55 and 60.
- b) the percentage of women between the ages of 30 and 40.
- c) the total number of people aged 60 and over.

4. There are six starting players on my son's soccer team. The season average (mean) number of goals scored by the starters was 14. When the team's two substitutes' season goals were added the team average dropped to 12. If one substitute scored 3 goals for the season, how many goals did the other score? Show how you found the answer.

5. . Families living on one short block in Dorchester have annual incomes of \$10,000, \$4,000, \$2,000, \$6,000, \$100,000, and \$4,000.
- Find the mean and medium income for these families.
 - Explain why is there such a big difference in size between the mean and the median?
 - Two additional families moved onto the block and lowered the mean to \$17,500. The annual income for one of them was \$4000, what was the other?

6. a) State the definition of a function.
 b) Determine in each case whether Q is a function of t. If not, state a reason.
 i)



- ii). The chart below gives the height (H) and weight (W) for students enrolled in a seminar. Is weight a function of height? Explain your answer with reference to the data.

H	68 in.	70 in.	67 in.	71 in.	64 in.	70 in.
W	160 lbs.	140 lbs.	130 lbs.	155 lbs.	105 lbs.	145 lbs.

- iv) Q represents the amount of gas in the tank of a car over the period of a year.

7a. Is $(-2, -12)$ a solution to the equation $y = 3x^3 - 3x - 2$? Demonstrate why or why not.

7b. If $y = f(x)$ for the equation above. What is the $f(2)$?

8. Construct a histogram of a set of data using Excel. (See ch. 1.1 problem #8 as example).