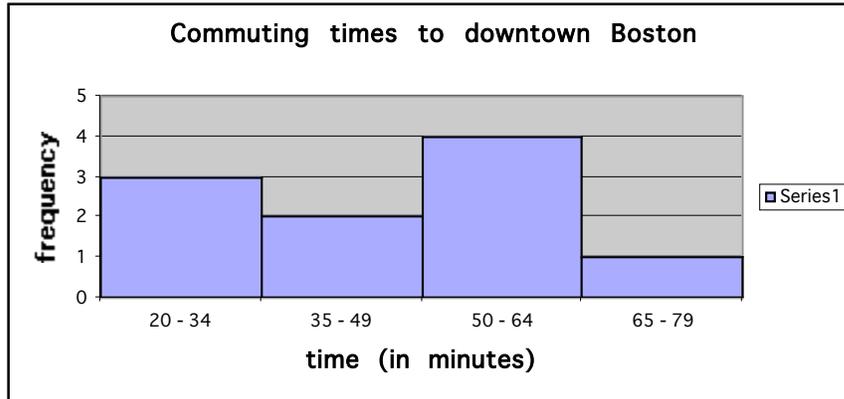


Solutions for Review Sheet Math Q114 Spring 2004

1. a) Mean = $(35+20+25+40+60+30+50+75+60+50)/10=44.5$ minutes
Median = 45 minutes

b) Histograms will vary depending on intervals chosen.

Here is one example, using intervals that are 15 minutes wide:



c) summary could note that

- Commuting times are diverse – ranging from 20 minute to 75 minutes
- The largest interval was 50 – 64 minutes, representing 40% of the data. The mean and the median are close to this interval.

2. a) Here is the table with relative frequencies inserted. This can be used to make the histogram.

interval	freq.	rel. freq.	representative age
18 - 20	2	17%	19
21 - 23	4	33%	22
24 - 26	1	8%	25
27 - 29	3	25%	28
30 - 32	0	0%	31
33 - 35	2	17%	34
total	12	100%	

b) To estimate the mean age, we find an age that represents each interval. These ages are shown in the last column.

Mean age = $[19(2)+22(4)+25(1)+28(3)+31(0)+34(2)]/12 = 25.25$, or about 25 years.

3. a) number of men between ages of 55 and 60: 26

b) percentage of women between ages of 30 and 40: 28%

c) total number of people aged 60 and over: $26+24=50$

Analysis could include the following points:

- The ages for men are skewed to the right, with a peak of 17% in the groups 25 – 30 years old and 30 – 35 years old.
- The ages for women are more uniformly spread out, with a fairly even distribution between ages 20 and 45. More specifically, there were about 12% in the 20 – 25 year group, 13% in the 25 – 30 year group, and about 14% in the 30 – 45 age group.
- For both genders, the ages extended up through 75; it appears that there are a couple of people in the 75 – 80 age group for men, but not for women

4. $(\text{Sum for 6 players})/6 = 14$ therefore Sum for 6 players = $(6)(14)$ or 84

$(\text{Sum for 8 players})/8 = 12$ therefore Sum for 8 players = $(8)(12)$ or 96

The difference between two sums is 12 goals and these were contributed by the two subs. Since one sub scored 3 goals, the other must have scored 9 goals ($12-3 = 9$).

Answer: 9 goals.

5. a. Mean = \$21,000; Median = \$5000 (first put in order then average two middle incomes since there is an even number of them).

b. The \$100,000 is an outlier that skews the mean but doesn't effect the median.

c. If mean of 8 families is \$17,500 then sum of these is $8 \times 17500 = 140,000$.

d. The sum for the 6 families is 126,000. Therefore the two new families must contribute 14,000 to the sum. One you are told is \$4000, so the other is \$10,000.

6. a) A function is a relationship between two quantities (usually called x and y), such that each value of x determines exactly one value of y . That is, given one input, there is exactly one output.

b) i) Q is NOT a function of t , since the graph does not pass the vertical line test.

ii) From the table, we see that Weight is NOT a function of Height That's because when $H = 70$ in., we have two different values for Weight.

iv) Q is a function of t , since for one particular time, we have exactly one amount of gas in the tank.

7a. The solution if the ordered pair $(-2, -20)$

$$y = 3(-8) - 3(-2) - 2 = -24 + 6 - 2 = -20$$