MAT 1372 Statistics with Probability Hmwk 1 Spring 2012

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1. The following data represent the sizes of 30 families that reside in a small town in Guatemala:

5, 13, 9, 12, 7, 4, 8, 6, 6, 10, 7, 11, 10, 8, 15, 8, 6, 9, 12, 10, 7, 11, 10, 8, 12, 9, 7, 10, 7, 8

**(a)** Construct a frequency table for these data.

**(b)** Using a line graph, plot the data.

**(c)** Plot the data as a frequency polygon.

2. The following frequency table relates the weekly sales of bicycles at a given store over a 42-week period.

**Value** 0 1 2 3 4 5 6 7

**Frequency** 3 6 7 10 8 5 2 1

**(a)** In how many weeks were at least 2 bikes sold?

**(b)** In how many weeks were at least 5 bikes sold?

**(c)** In how many weeks were an even number of bikes sold?

**3.** Fifteen fourth-graders were asked how many blocks they lived from

school. The results are displayed in the following graph.



**(a)** What is the maximum number of blocks any student lives from school?

**(b)** What is the minimum number of blocks?

**(c)** How many students live less than 5 blocks from school?

**(d)** How many students live more than 4 blocks from school?

**7.** Draw a relative frequency table for the data of Prob. 1. Plot these

relative frequencies in a line graph.

**8.** The following data represent the time to tumor progression, measured

in months, for 65 patients having a particular type of brain tumor called

*glioblastoma*:

6, 5, 37, 10, 22, 9, 2, 16, 3, 3, 11, 9, 5, 14, 11, 3, 1, 4, 6, 2, 7,

3, 7, 5, 4, 8, 2, 7, 13, 16, 15, 9, 4, 4, 2, 3, 9, 5, 11, 3, 7, 5, 9,

3, 8, 9, 4, 10, 3, 2, 7, 6, 9, 3, 5, 4, 6, 4, 14, 3, 12, 6, 8, 12, 7

**(a)** Make up a relative frequency table for this data set.

**(b)** Plot the relative frequencies in a frequency polygon.

**(c)** Is this data set approximately symmetric?

**9.** The following relative frequency table is obtained from a data set of

the number of emergency appendectomies performed each month at

a certain hospital.

**Value** 0 1 2 3 4 5 6 7

**Relative frequency** 0.05 0.08 0.12 0.14 0.16 0.20 0.15 0.10

**(a)** What proportion of months has fewer than 2 emergency appendectomies?

**(b)** What proportion of months has more than 5?

**(c)** Is this data set symmetric?

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**1.** The following data set represents the scores on intelligence quotient

(IQ) examinations of 40 sixth-grade students at a particular school:

114, 122, 103, 118, 99, 105, 134, 125, 117, 106, 109, 104, 111, 127,

133, 111, 117, 103, 120, 98, 100, 130, 141, 119, 128, 106, 109, 115,

113, 121, 100, 130, 125, 117, 119, 113, 104, 108, 110, 102

**(a)** Present this data set in a frequency histogram.

**(b)** Which class interval contains the greatest number of data values?

**(c)** Is there a roughly equal number of data in each class interval?

**(d)** Does the histogram appear to be approximately symmetric? If so,

about which interval is it approximately symmetric?

3. The following data (in thousands of dollars) represent the net annual

income for a sample of taxpayers:

47, 55, 18, 24, 27, 41, 50, 38, 33, 29, 15, 77, 64, 22, 19, 35, 39, 41,

67, 55, 121, 77, 80, 34, 41, 48, 60, 30, 22, 28, 84, 55, 26, 105, 62,

30, 17, 23, 31, 28, 56, 64, 88, 104, 115, 39, 25, 18, 21, 30, 57, 40,

38, 29, 19, 46, 40, 49, 72, 70, 37, 39, 18, 22, 29, 52, 94, 86, 23, 36

**(a)** Graph this data set in a frequency histogram having 5 class

intervals.

**(b)** Graph this data set in a frequency histogram having 10 class

intervals.

**(c)** Which histogram do you think is more informative? Why?

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1. For the following data, draw stem-and-leaf plots having (a) 4 stems and (b) 8 stems.

124, 129, 118, 135, 114, 139, 127, 141, 111, 144, 133, 127,

122, 119, 132, 137, 146, 122, 119, 115, 125, 132, 118, 126,

134, 147, 122, 119, 116, 125, 128, 130, 127, 135, 122, 141

**3.** The following are the ages, to the nearest year, of 43 patients admitted to the emergency ward of a certain adult hospital:

23, 18, 31, 79, 44, 51, 24, 19, 17, 25, 27, 19, 44, 61, 22, 18,

14, 17, 29, 31, 22, 17, 15, 40, 55, 16, 17, 19, 20, 32, 20, 45,

53, 27, 16, 19, 22, 20, 18, 30, 20, 33, 21

Draw a stem-and-leaf plot for this data set. Use this plot to determine the 5-year interval of ages that contains the largest number of data points.