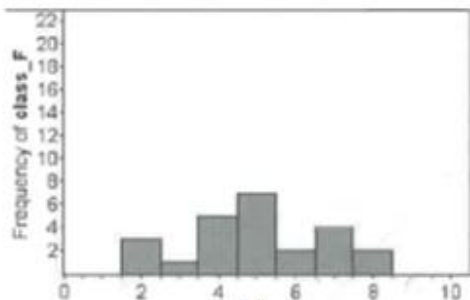


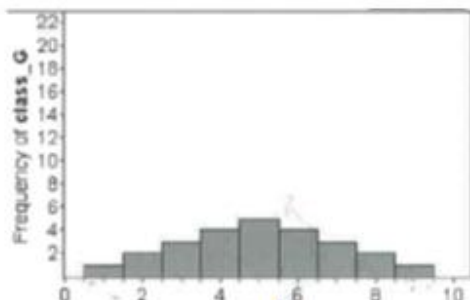
[Variation in Data]

(§9.2 worksheet III)

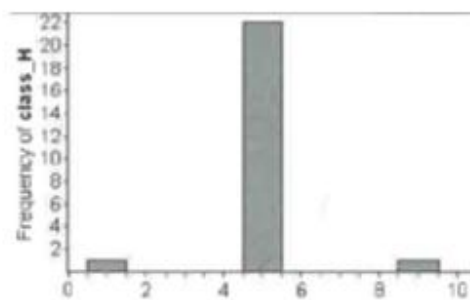
1. Use the following histograms to answer the questions below.



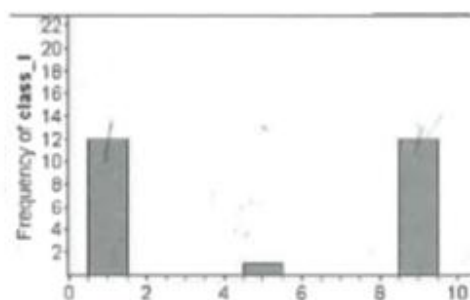
F



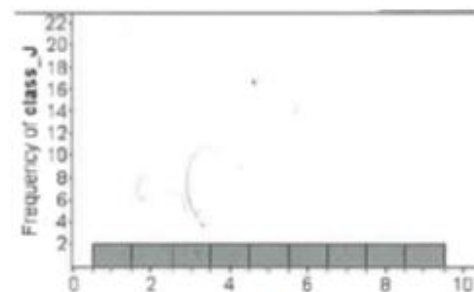
G



H



I



J

a. Between F and G, which graph has more variability? Explain.

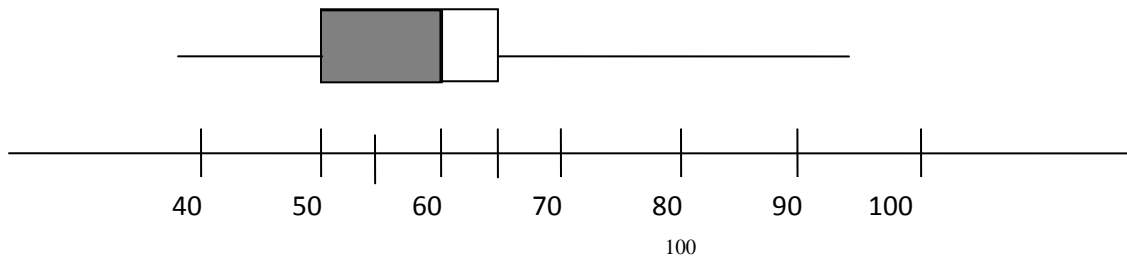
b. Between H, I, and J, which graph has less variability? Explain.

2. Determine if the graphs of the following would be approximately normal (symmetric), skewed left, skewed-right, uniform or bi-modal

- A test designed for fifth-graders given to second-graders. _____
- Running times for a mile given to a high school PE class. _____
- The last digit in the phone number of all students at WOU. _____
- A test designed for second-graders given to fifth-graders. _____
- Heights of people in a gym which is occupied by a team of gymnasts and a team of basketball players. _____

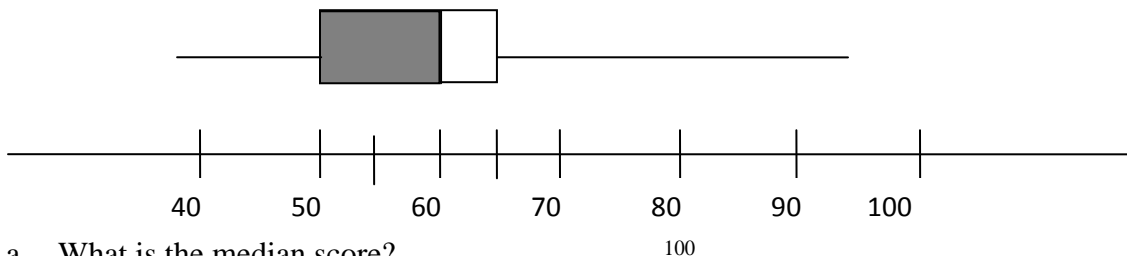
Box and Whisker plots

There is a graph related to the 5-number summary called a box and whisker plot. The box and whisker plot below corresponds to the 5-number summary (38,50,60,65,95).



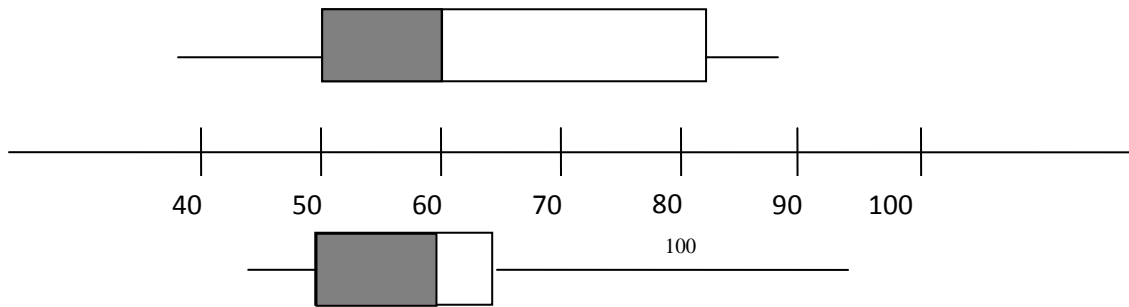
A box and whisker plot is drawn above a number line where the left most point of the plot is the minimum value from the 5-number summary. A line is drawn from the minimum value to the leftmost edge of the box (a “whisker”). The left edge of the box is above the 25th percentile. The right edge of the box is above the 75th percentile. There is a line in the middle of the box above the median. There is a line drawn from the right edge of the box ending at the maximum value. The shading of the box is optional. Note that because the numbers used to create the 5-number summary, the plot is naturally divided into 4 pieces, each portion representing 25% of the data points.

3. The following box-and-whisker plot represents 80 exam scores.



- a. What is the median score?
- a. 40 b. 50 c. 60 d. 70 e. Can't be determined
- b. How many scores are between 50 and 60?
- a. 40 b. 20 c. 50 d. 25 e. Can't be determined
- c. What percentage of scores is between 50 and 65?
- a. 10 b. 25 c. 50 d. 40 e. Can't be determined
- d. How many scores are above 75?
- a. 15 b. 20 c. 25 d. 50 e. Can't be determined

4. Compare and Contrast the data represented by the following two boxplots (exam scores from two different classes). Which class would you say did “better”? Why?



5. Find 5-number summaries for the following lists of data. Be careful as the number of data points in each example varies, and sometimes percentiles are calculated differently. Then draw a box and whisker plot for each.

a. {1, 2, 2, 4, 5, 7, 9, 10}

b. {1, 2, 2, 4, 5, 6, 7}

- c. {93, 92, 94, 100, 60, 86, 88, 92, 90} (these numbers were taken from the temperature example from worksheet 2)

- d. Create a box and whisker plot corresponding to the test scores we worked with the other day.

75	80	76	81	74	90
60	83	81	81	95	82
99	65	54	77	79	97
91	82	97	70	80	77