Math 153 - Quiz 3

September 13, 2012

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (3 points) Joanna sells childrens' t-shirts. One morning she sold 14 shirts—their sizes are shown below.

$$\cancel{6}, \cancel{10}, \cancel{8}, 12, 12, \cancel{8}, 12, \cancel{6}, \cancel{10}, 12, 12, 12, \cancel{6}, 12$$

(a) Compute the mean, median, and mode of these shirt sizes. Label which is which.

6, 6, 6, 8, 8, 10, 10, 12, 12, 12, 12, 12, 12, 12

$$\bar{x} = \frac{3(6) + 2(8) + 2(10) + 7(12)}{14} = \frac{138}{14} \approx 9.86$$

$$\text{MEDIAN} = \frac{10+12}{2} = 11$$

$$\text{MODE} = 12$$

(b) Someone asked Joanna the size of her average customer. Should she report the mean, median, or mode? Briefly explain.

IN THIS CONTEXT, AVERAGE CUSTOMER PROBABLY MEANS MOST COMMON CUSTOMER.

SHE SHOULD REPORT THE MODE: 12.

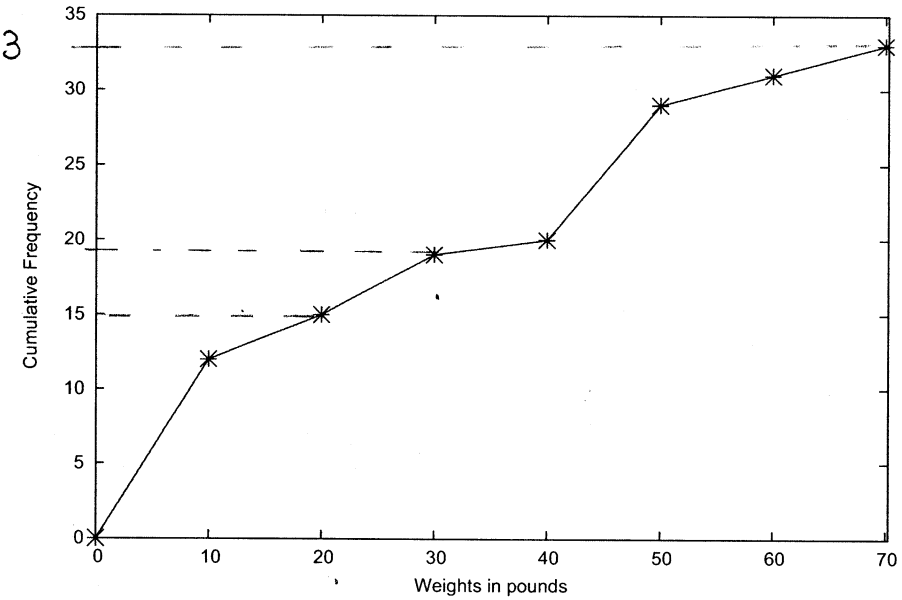
2. (1 point) Construct a stem-and-leaf plot for the following collection of numbers. Be sure to include a key.

$$\cancel{1.1}, \cancel{4.7}, \cancel{1.8}, \cancel{1.4}, \cancel{3.2}, \cancel{1.1}, \cancel{4.0}, \cancel{2.7}, \cancel{2.5}, \cancel{1.6}, \cancel{2.6}, \cancel{1.7}$$

STEM	LEAF
1	1 1 4 6 7 8
2	5 6 7
3	2
4	0 7

3 | 2 means 3.2

3. (3 points) The following ogive shows the distribution of weights of dogs at a local dog show.



(a) How many dogs are in the sample described by the ogive?

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(b) How many dogs had weights between 20 lbs and 30 lbs?

$19 - 15 = 4$ dogs

(c) In which range of weights (0–10, 10–20, etc.) were there the most dogs?

0-10 range had 18 dogs (The steepest segment is in the 0-10 range.)

4. (3 points) The salaries of employees at a local company are shown below. Find the mean salary and the median salary. Which is a better measure of center? Briefly explain.

Salary	Number of Employees
\$34,000	10
\$52,000	6
\$68,500	2
\$125,250	1

$\bar{x} = \dfrac{10(34{,}000) + 6(52{,}000) + 2(68{,}500) + 125{,}250}{19} \approx \$48{,}118.42$

Median = 9^{TH} salary = \$34,000

Hard to say which is better in this case. The mean does seem to represent the center of the data pretty well.