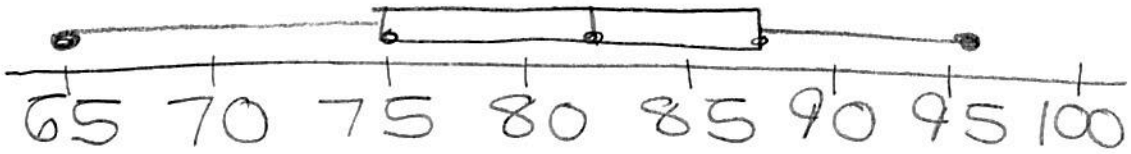
Name: _____ Date: _____

UNIT 4 **LESSON 4**

Do Now: The grades in Ms. Cronin's math class were as follows. Construct a box plot for this data.

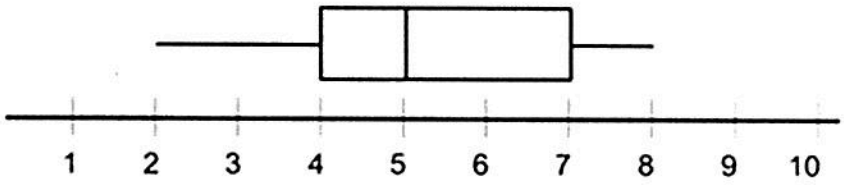
65, 72, 78, 96, 85, 75, 87, 86, 80, 92

Min = 65
Q1 = 75
Med = 82.5
Q3 = 87
Max = 96

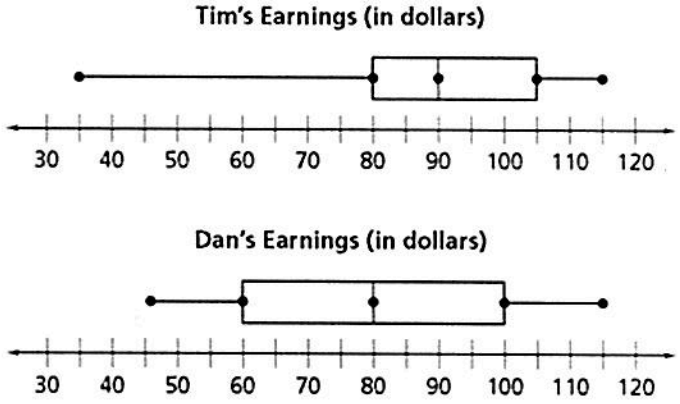


AIM: Finding Interquartile Range & Interpreting Dot Plots

1. Given the box plot below determine the following.
   a) What is the 1st Quartile?
   4
   b) What is the 3rd Quartile?
   7
   c) What is interquartile range?
   7 − 4 = 3



2. Given the box plots below determine the following.
   a. What are Tim's IQR earnings?
   105 − 80 = 25
   b. What are Dan's IQR earnings?
   100 − 60 = 40
   c. Which person had the smallest IQR?
   Tim
   d. Which person had the largest IQR?
   Dan



3. Given the data below determine the following.

   5, 14, 30, 3, 25, 10, 20

   a) What is the 1st Quartile?
   3
   b) What is the 3rd Quartile?
   25
   c) What is interquartile range?
   25 − 3 = 22

4. Given the data below determine the following.

   8, 5, 12, 9, 6, 2, 14, 7, 10, 17, 11, 8, 5, 5

   a) What is the 1st Quartile?
   5
   b) What is the 3rd Quartile?
   11
   c) What is interquartile range?
   11 − 5 = 6

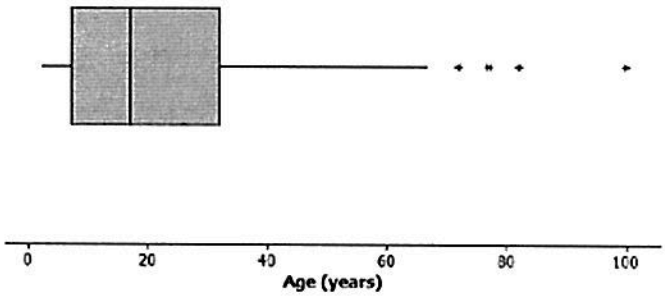
5. Given the box plots below determine the following.

a. What do you think those four stars represent?

outliers

b. Estimate these values.

73, 77, 82, 100



outliers: A value that "lies outside" (is much smaller or larger than) most of the other values in a set of data.

For example in the scores **25, 29, 3, 32, 85, 33, 27, 28** both 3 and 85 are "outliers".

6. Given the data below determine the outlier.

74, 80, 81, 5, 88, 91, 93, 98

too low

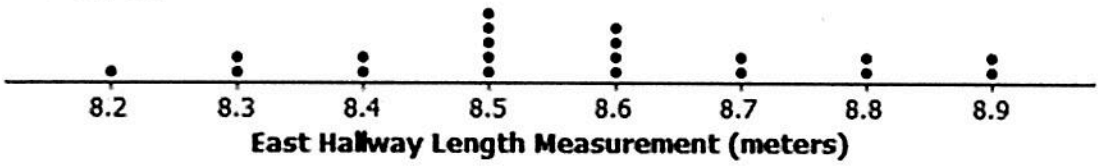
7. Given the data below determine the outlier.

24, 34, 374, 38, 44, 53, 75, 83, 85

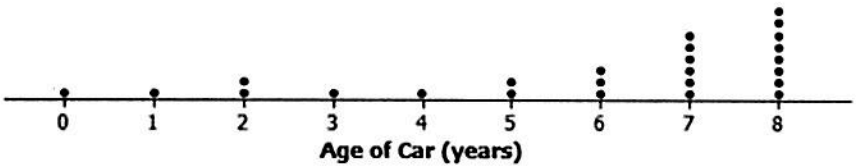
too high

A dot plot provides a graphical representation of a data distribution, helping us to visualize the distribution. The **mean** and the **median** of the distribution are numerical summaries of the center of a data distribution.

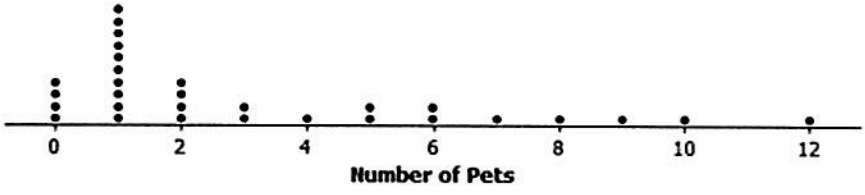
Example#1: When the distribution is nearly symmetrical, the mean and the median of the distribution are approximately equal. . For symmetrical distributions, the mean is an appropriate choice for describing a typical value for the distribution.



Example#2: When the distribution is not symmetrical (often described as skewed), the mean and the median are not the same. For skewed data distributions, the median is a better description of a typical value.

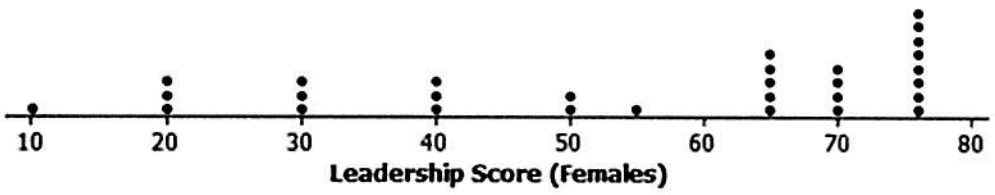


Skewed to the left

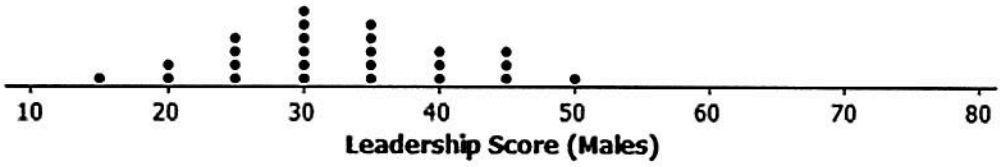


Skewed to the right

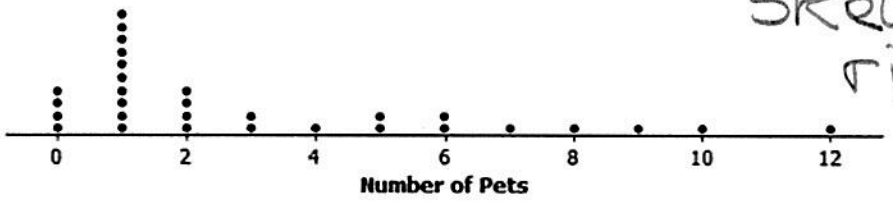
8. What do you think is a typical score for a female user? Explain your answer. Median = 65%
Skewed to the left



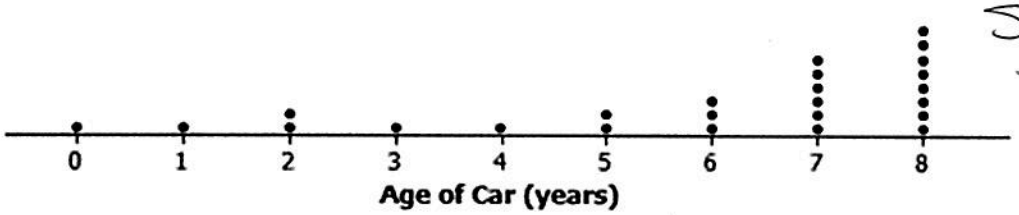
9. What do you think is a typical score for a male user? Explain your answer. Mean = 32.6%
Symmetric



10. What do you think is a typical number for a pets? Explain your answer. Median = 2 pets
Skewed to the right



11. What do you think is a typical for age of cars? Explain your answer Median = 7 years
Skewed to the left



Name: _____ Date: _____

UNIT 4 **HW#___** **LESSON 4**

1. Consider the data set: 1, 12, 14, 14, 15, 16, 24, 38

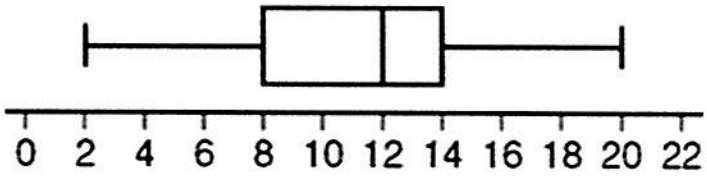
   a. What is the value of Q1? 13

   b. What is the value of Q3? 20

   c. What is the IQR of this sample? $20 - 13 = \boxed{7}$

   d. Are there outliers? Yes, 38

2. Given the box plot below determine the following.



a) What is the 1st Quartile? 8

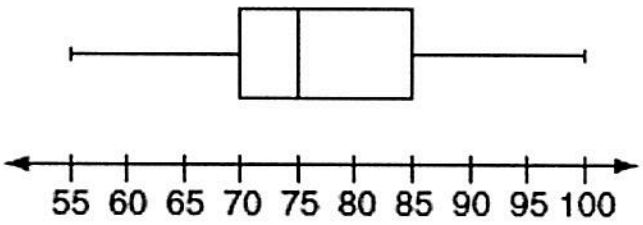
b) What is the 3rd Quartile? 14

c) What is interquartile range? $14 - 8 = \boxed{6}$

3. The accompanying diagram shows a box-and-whisker plot of student test scores on the Science midterm.

a. What is the interquartile range for these scores?

$85 - 70 = \boxed{15}$



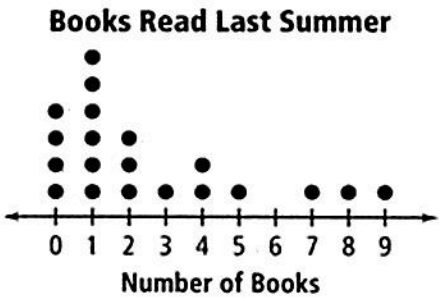
b. What is the percentage of students who scored 70% to 85%?

50%

c. What is the percentage of students who scored an 85% or higher?

25%

4. What ~~do you think~~ is a typical for number of books read? Explain your answer



Median = 4 books
skewed to the right