DATA SET #1

Weight varies throughout the universe. An object's weight on a planet depends on the planet's gravitational pull. Objects weigh more on planets with greater gravitational pull.

An object that weighs 100 pounds on Earth has the following weights in **pounds** on the given planets.

Planet	Weight
Mercury	38
Venus	90
Earth	100
Mars	38

Planet	Weight
Jupiter	240
Saturn	107
Uranus	86
Neptune	110

DATA SET #2

A light year is the distance traveled by light in one year (almost 6 trillion miles). A light minute is the distance traveled by light in one minute (over 10 million miles).

These units are used in space because distances in space are so great. Below are planets' distances from the sun, measured in **light minutes**.

Planet	Distance
Mercury	3.2
Venus	6
Earth	8.3
Mars	12.6

Planet	Distance
Jupiter	43.2
Saturn	79.3
Uranus	159.6
Neptune	246

DATA SET #3

Have you ever thought about how big Earth is? How about the size of other planets? The enormity is difficult to imagine!

Diameter measures a straight distance across the middle of a circle or sphere. Below are the diameters of planets measured in **miles**.

Planet	Diameter
Mercury	3032
Venus	7521
Earth	7926
Mars	4221

Planet	Diameter
Jupiter	88846
Saturn	74897
Uranus	31763
Neptune	30775

DATA SET #4

Some nights we can see thousands of stars in the sky. These stars are incredibly far away form Earth. Besides the Sun, the light from stars takes years to reach us.

Below are the 15 nearest star systems' distances from Earth, measured in **light years**.

Star System	Distance
Alpha Centauri	4.3
Barnard's Star	6
Wolf 359	7.8
Lalande 21185	8.3
Sirius	8.6

Star System	Distance
Luyten 726-8	8.7
Ross 154	9.7
Ross 248	10.3
Epsilon Eridani	10.5
Lacaille 9352	10.7

Star System	Distance
Ross 128	10.9
EZ Aquarii	11.3
Procyon	11.4
61 Cygni	11.4
Struve 2398	11.5

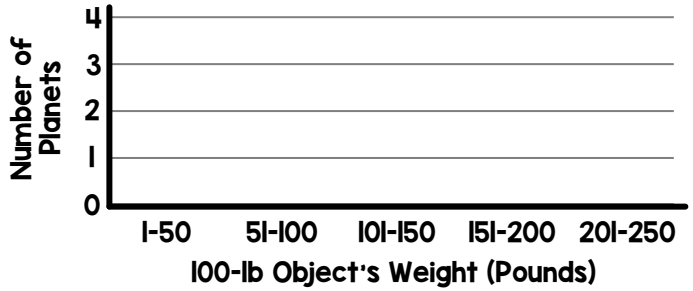
SPACE STATS EXPLORATION

Name _____

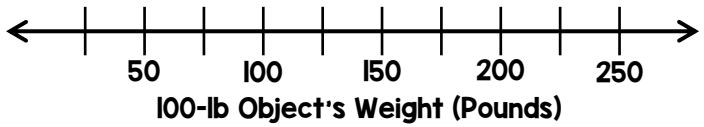
Look at each data set and fill in the missing information below. Be sure to show your work for calculations.

Data Set #1

Histogram:



Box & Whiskers Plot:

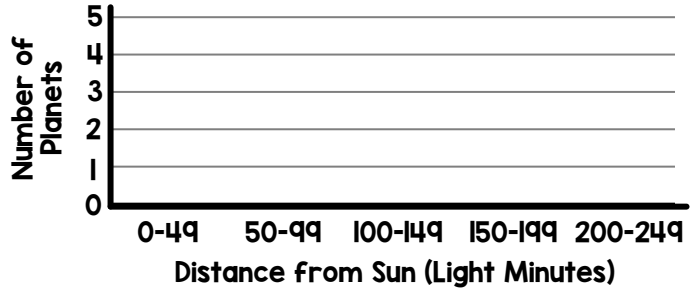


Measures of Center	Measures of Variability
Median:	**Range:**
Mean:	**Interquartile Range:**
	Mean Absolute Deviation:

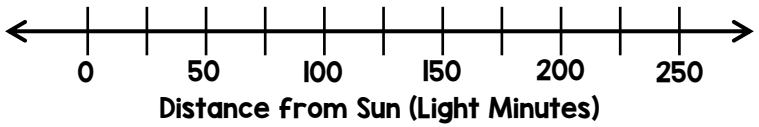
Can you spot an outlier, or a data point that is far from the others? How does it affect the mean?

Data Set #2

Histogram:



Box & Whiskers Plot:



Measures of Center	Measures of Variability
Median:	**Range:**
Mean:	**Interquartile Range:**
	Mean Absolute Deviation:

Why are the measures of center so different?

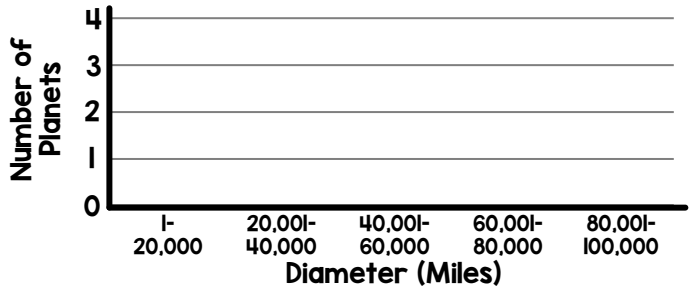
SPACE STATS EXPLORATION

Name _____

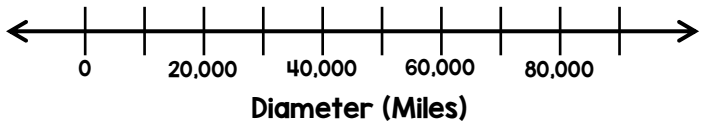
Look at each data set and fill in the missing information below. Be sure to show your work for calculations.

Data Set #3

Histogram:



Box & Whiskers Plot:

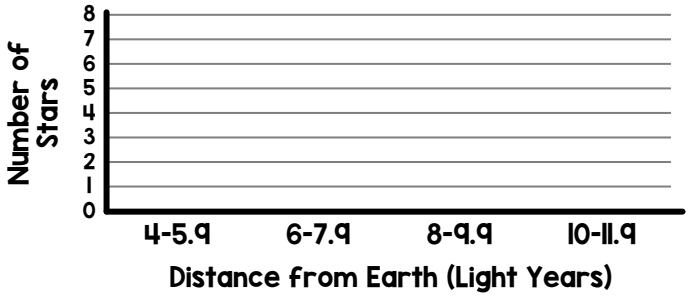


Measures of Center	Measures of Variability
Median:	**Range:**
Mean:	**Interquartile Range:**
	Mean Absolute Deviation:

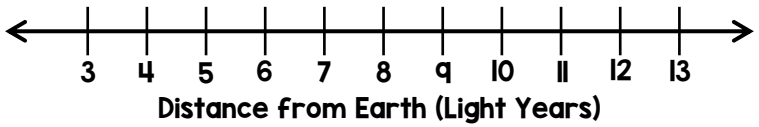
How would you describe the spread of this data? (Use specific values to support your answer.)

Data Set #4

Histogram:



Box & Whiskers Plot:



Measures of Center	Measures of Variability
Median:	**Range:**
Mean:	**Interquartile Range:**
	Mean Absolute Deviation:

How does the shape of the histogram relate to the shape of the box & Whiskers Plot?

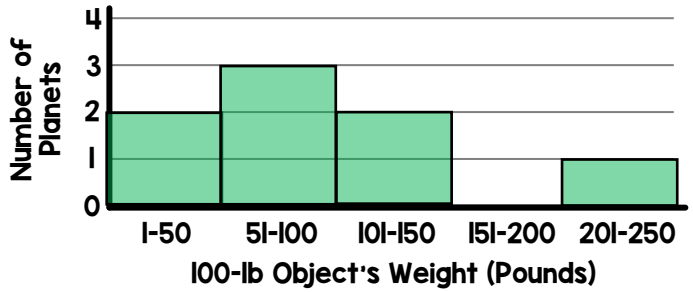
SPACE STATS EXPLORATION

Name _____

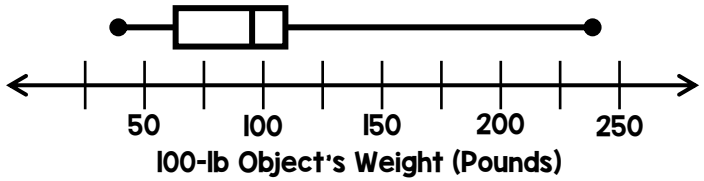
Look at each data set and fill in the missing information below. Be sure to show your work for calculations.

Data Set #1

Histogram:



Box & Whiskers Plot: (38, 62, 95, 108.5, 240)

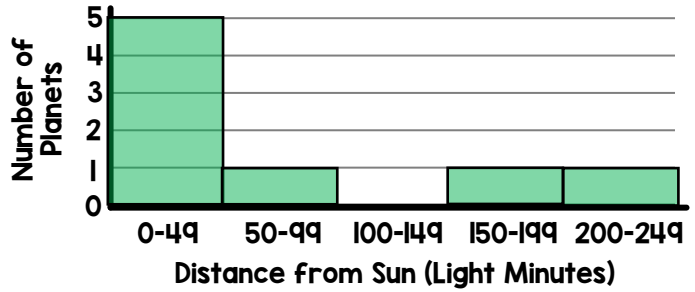


Measures of Center	Measures of Variability
Median: 95 Mean: 101.125	Range: 202 Interquartile Range: 46.5 Mean Absolute Deviation: 38.40625

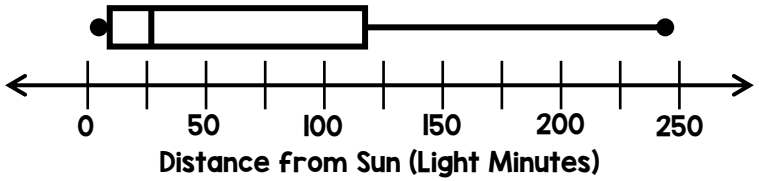
Can you spot an outlier, or a data point that is far from the others? How does it affect the mean?
Yes, 240 (Jupiter) is far from the other data points. It makes the mean greater (than the median).

Data Set #2

Histogram:



Box & Whiskers Plot: (3.2, 7.15, 27.9, 119.45, 246)



Measures of Center	Measures of Variability
Median: 27.9 Mean: 69.775	Range: 242.8 Interquartile Range: 112.3 Mean Absolute Deviation: 68.89375

Why are the measures of center so different?
Answers will vary. The range of values is great. The data is skewed to the right, making the mean greater than the median, because of the great values for Uranus & Neptune.

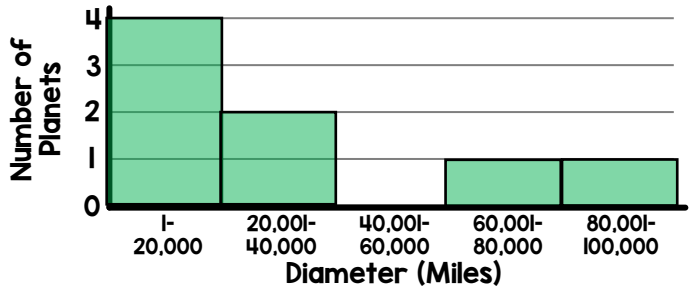
SPACE STATS EXPLORATION

Name _____

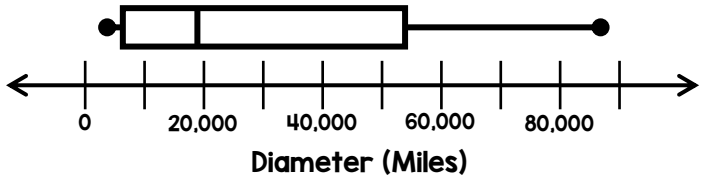
Look at each data set and fill in the missing information below. Be sure to show your work for calculations.

Data Set #3

Histogram:



Box & Whiskers Plot: (3032, 5871, 19350.5, 53330, 88846)



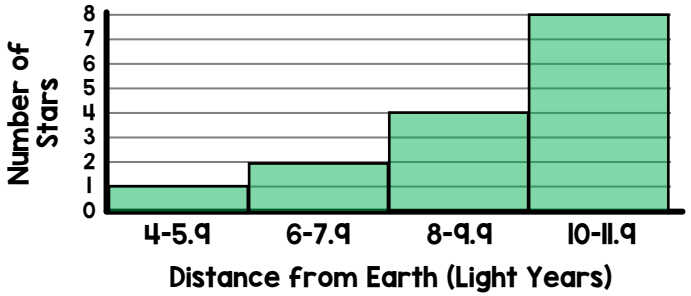
Measures of Center	Measures of Variability
Median: 19350.5 Mean: 31122.625	Range: 85814 Interquartile Range: 47459 Mean Absolute Deviation: 25534.53125

How would you describe the spread of this data? (Use specific values to support your answer.)

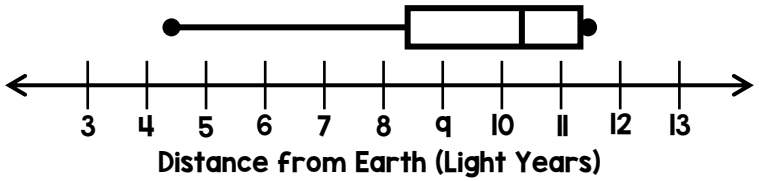
Answers will vary. The data is very spread out, as shown by the range, interquartile range, and mean absolute deviation. Most of the data points are clustered on the lower (left) side.

Data Set #4

Histogram:



Box & Whiskers Plot: (4.3, 8.3, 10.3, 11.3, 11.5)



Measures of Center	Measures of Variability
Median: 10.3 Mean: $9.42\overline{6}$	Range: 7.2 Interquartile Range: 2.3 Mean Absolute Deviation: $1.71\overline{46}$

How does the shape of the histogram relate to the shape of the box & Whiskers Plot?

Answers will vary. Both show the majority of data points are to the right (greater). Both show the range of data and that the median is on the greater side of the data.