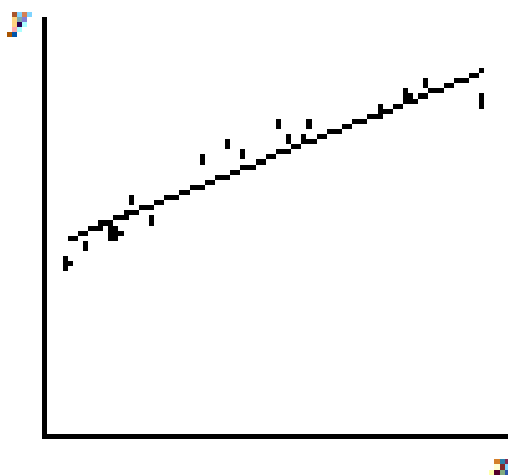
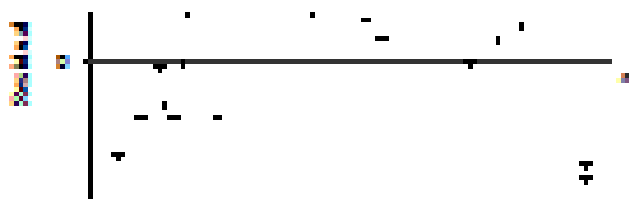


Suppose you are given a scatter plot and least-squares line that looks like this:



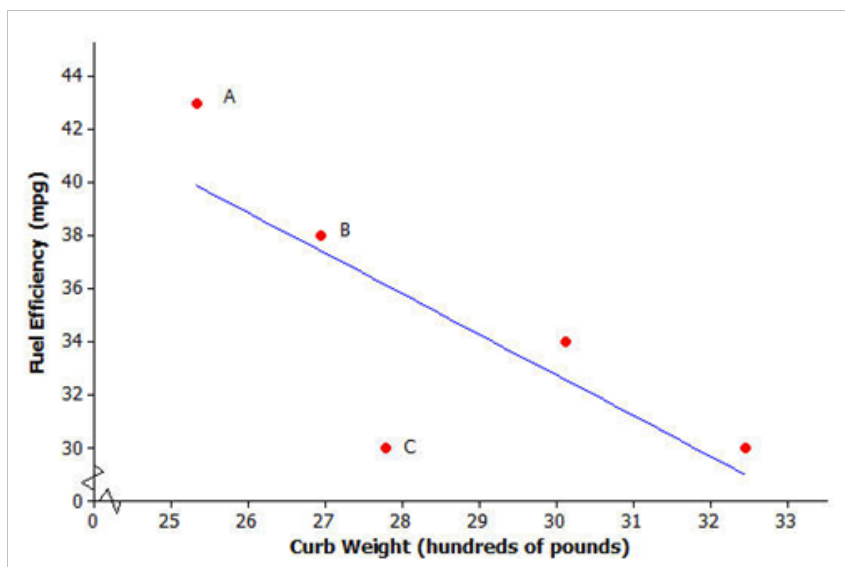
Describe what you think the residual plot would look like.

The residual plot has an arch shape, like this:



Suppose that you have a scatter plot and that you have drawn the least-squares line on your plot. Remember that the residual for a point in the scatter plot is the vertical distance of that point from the least-squares line.

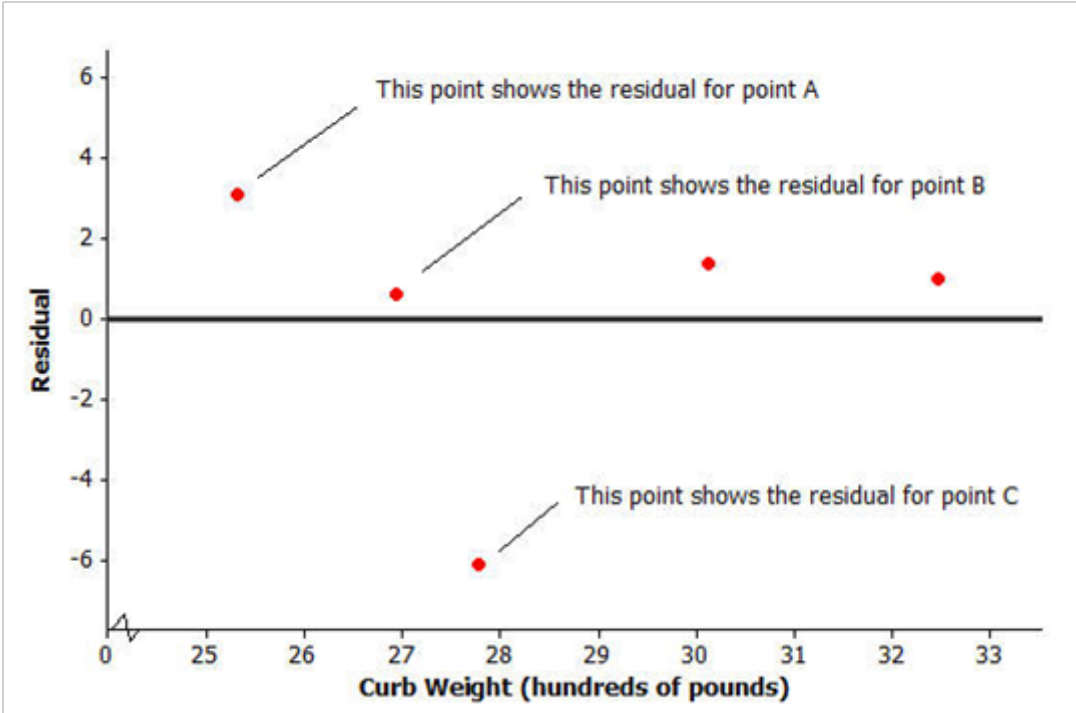
A scatter plot and least-squares line are shown below



What kind of residual will Point *A* have?

What kind of residual will Point *B* have?

What kind of residual will Point *C* have?



A factory makes three sizes of bookcases. The sizes are small, medium, and large. Each bookcase can be made from pine, oak, or yew. The two-way table shows some information about the number of bookcases the factory makes in one week.

	Small	Medium	Large	Total
Pine	7	12	4	23
Oak	10	16	8	34
Yew	3	8	2	13
Total	20	36	14	70

a) What is the joint relative frequency of the number of Medium Yew tables?

b) What is the joint relative frequency of the number of Large Pine tables?

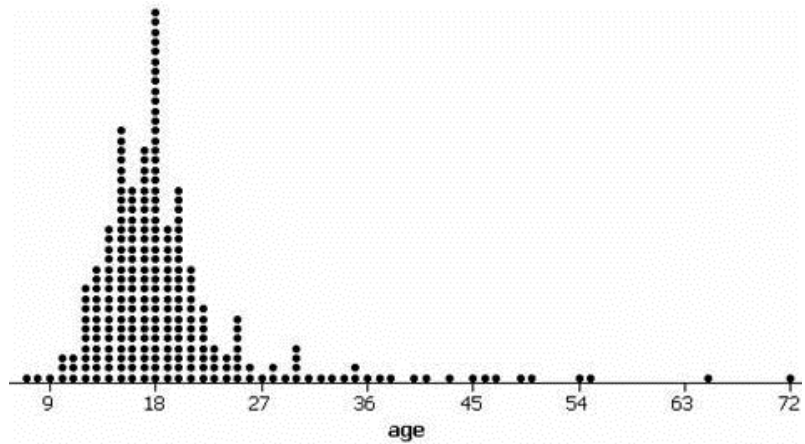
c) What is the conditional relative frequency of the number of Small tables that are Pine?

d) What is the conditional relative frequency of the number of Oak tables that are Large?

Given the following dot plot:

1. Describe the distribution of the data.

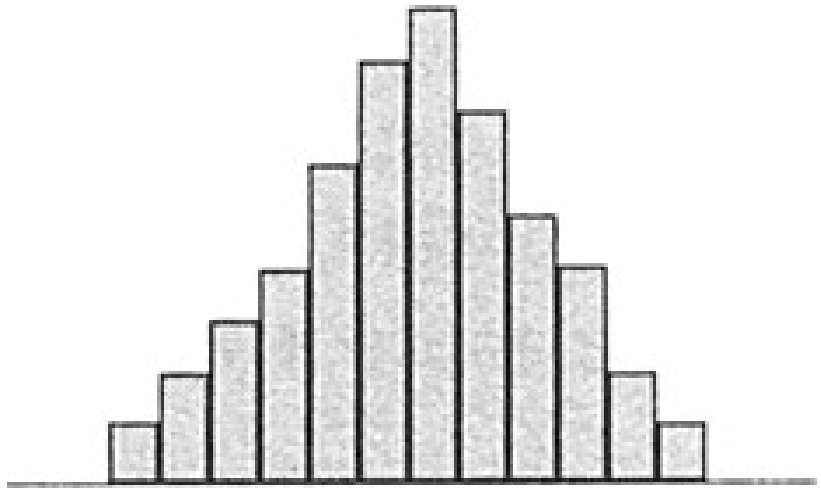
2. Which is a better representation of the data, the mean or the median? Justify your answer.



Given the following data plot:

1. Describe the distribution of the data.

2. Which is a better representation of the data, the mean or the median? Justify your answer.



Identify each sample, and suggest a population from which it was selected. Then classify the sampling method as *simple random*, *systematic*, *self-selected*, *convenience*, or *stratified*.

At a town council meeting, the supervisor asks five citizens in the audience for their opinions on whether to approve rezoning for a residential area. Sample:

Population: Method:

To determine the extent of leaf blight in the maple trees at a nature preserve, a botanist divides the property into 10 sections, randomly selects a 200-foot by 200-foot square in the section, and then examines all the maple trees in the square.

Sample: Population: Method:

To determine the popularity of online banking in the United States, a polling company sends a mail-in survey to 5000 adults to see if they bank online, and if they do, how many times they bank online each month.

Sample: Population: Method:

Identify each sample as *biased* or *unbiased*. Circle the correct answer.

A shoe manufacturer wants to check the quality of its shoes. Every twenty minutes, 20 pairs of shoes are pulled off the assembly line for a quality inspection.

To learn which benefits employees at a large company think are most important, the CEO (Chief Executive Officer) has asked his upper management for their opinions.

Determine whether each situation describes a *survey*, *observational study*, or an *experiment*.

The manager of a restaurant is trying to reduce the menu by removing items that are infrequently ordered. For an entire month, the manager records the number of times that each item on the menu is ordered.

A software company wants to determine if a new GPS application for their cell phones will be more user-friendly than the original version. The company divides a sample of 100 subscribers into two groups. They give the first group use of the original application and give the second group use of the new application. They observe and record the subscribers' actions as they use the applications.

The board members of the home owners association for a community randomly call a sample of the residents to determine what improvements should be made to the community.