

Show all work to support your solutions. Provide details to support answers on loose leaf paper.

- The **mean**, or *average*, of n numbers is the sum of the numbers divided by n .
- The **median** of n numbers is the middle when the numbers are written in order. (If n is even, the median is the mean of the two middle numbers.)
- The **mode** of n numbers is the number or numbers that occur most frequently. There may be one mode, no mode, or more than one mode.
- The **range** is a measure of dispersion. It is the difference between the greatest and least data values.

Example: Find the mean, median, and mode of the data set {43, 47, 47, 46, 59, 54, 51}

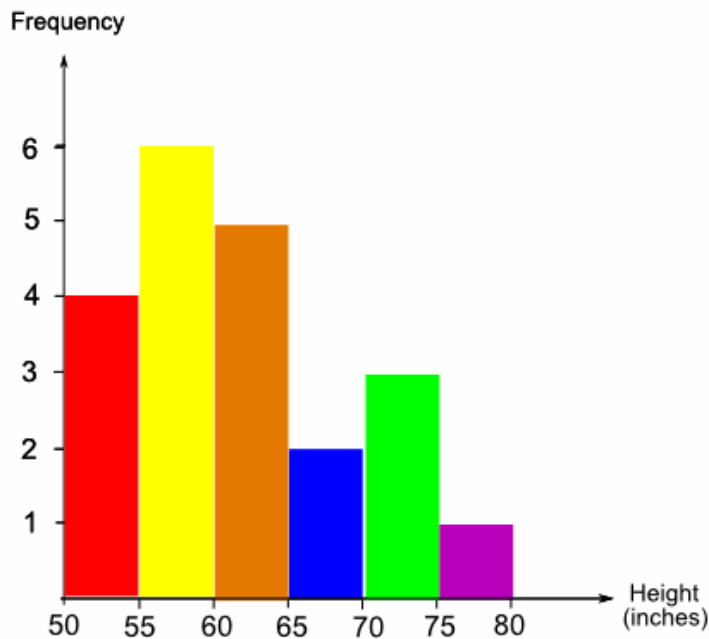
1. Mean : $\frac{43+46+47+47+51+54+59}{7} = 49.57$
2. Median : 43, 46, 47, 47, 51, 54, 59 middle number is 47
3. Mode : 47 (appears twice)

Find the mean, median, and mode for each data set.

1. {6, 7, 9, 9, 9, 10}
2. {220, 250, 210, 290, 310, 230, 320}

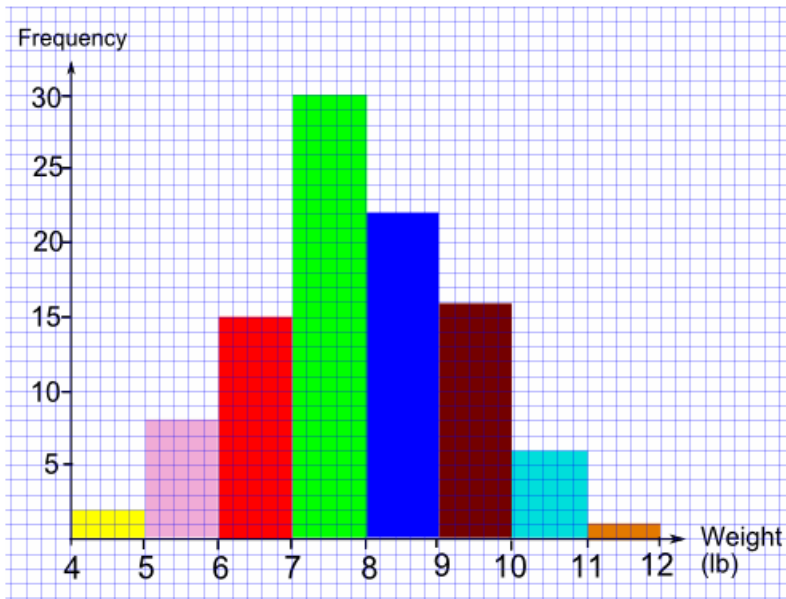
Find the range of the data set.

3. {10, 12, 7, 11, 20, 7, 6, 8, 9}
4. {19.4, 16.3, 12.7, 24.8, 19.2, 15.4}



5. The histogram shows the heights of 21 students in a class, grouped into 5-inch groups.

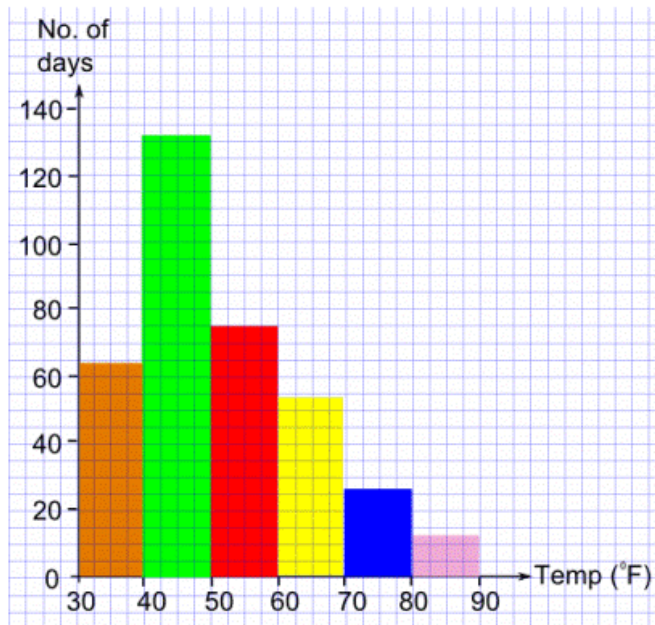
How many students were greater than or equal to 60 inches tall?



6. The histogram shows the birth weights of 100 new born babies. How many babies weighed 8 lb or more?

Jim measured the temperature at 2 p.m. at the same spot in his garden and recorded his results to the nearest degree ($^{\circ}\text{F}$) for each day in the year (365 days).

The results are shown in the following histogram:



7. On approximately what percent of the days was the 2 p.m temperature above 40°F but less than 70°F ?

Writing Equations of Lines

$$y = mx + b$$

Write an equation for the line using the data described.

8. passes through the point (0,150) with a slope of 20
9. passes through the point (0,1000) with a slope of -50
10. passes through the point (0,0) with a slope of $\frac{2}{5}$

Statistics Vocabulary**5 Matching questions**

- | | |
|------------------------------|---|
| 11. _____ Census | A. occurs when some groups of the population are left out of the process of choosing a sample. |
| 12. _____ Standard deviation | B. collection of data from EVERY element in a population |
| 13. _____ Statistics | C. in _____ sampling we divide the population into sections or clusters. Then we randomly select some of those clusters and choose all of the members from each cluster selected. |
| 14. _____ Undercoverage | D. A statistic used as a measure of the dispersion or variation in a distribution, equal to the square root of the arithmetic mean of the squares of the deviations from the arithmetic mean. |
| 15. _____ cluster sampling | E. the science of data |

Experimental Design

16. A new type of soy-based baby formula has been developed to help babies who have trouble gaining weight in their first six months of life. The parents of 150 babies have volunteered their children to participate in this study. All of the babies are between 8 and 9 weeks of age (a time when they should be growing very rapidly) and have been identified by their doctors as gaining weight more slowly than normal.
- The babies will be weighed before the study begins. Half of them will be given the new formula and the other half will be given the type of formula that is currently recommended for slowly growing babies. After three months, all the babies will be weighed again.
- Describe an appropriate method for assigning the subjects to the two groups so that each group will have an equal number of subjects.
 - In this study, the researchers chose to include a group who used the currently recommended brand of formula. Why is it important to include a control group in this study even though weights will be measured at the beginning and at the end of the study?
 - Many babies continue to drink formula until they are 12 to 15 months of age. Why would the researchers choose to use only babies who are about 2 months old (about 8 to 9 weeks old) in the study?