PRACTICE

**Use each sample to draw inferences about the population.**

1. A university wanted to know how students felt about their education. They conduct a simple random sample of 500 students. 80% of the students were satisfied with their education. If the university has 12,000 students, how many students do you think will be satisfied with their education?

$\frac{\text{is}}{\text{of}} = \frac{\%}{100}$

What is 80% of 12,000?

$\frac{x}{12000} = \frac{80}{100}$

$\frac{100x}{100} = \frac{960000}{100}$

$x = 9600$ students are satisfied

2. A large corporation wants to find out which benefits plan its employees would prefer. They randomly select 50 employees from a list of all employees. 40 of the 50 employees prefer Blue Cross. If the corporation has 2800 employees, how many will prefer Blue Cross?

prefer BC → $\frac{40}{50} = \frac{x}{2800}$

total →

$50x = 112000$

$x = 2240$ people prefer Blue Cross

3. Bob records the color of cars passing by. Use his sample to predict the following.

$\frac{\text{is}}{\text{of}} = \frac{\%}{100}$

| Color | Percent |
|---|---|
| White | 40 |
| Black | 35 |
| Red | 25 |

If 80 cars drove by…

a. Predict how many would be White.

$\frac{x}{80} = \frac{40}{100}$ $x = 32$ cars

b. Predict how many would be Black.

$\frac{x}{80} = \frac{35}{100}$ $x = 28$ cars

c. Predict how many would be Red.

$\frac{x}{80} = \frac{25}{100}$ $x = 20$ cars

4. Bob surveys 50 random 7th graders at Generic MS on their favorite super hero. Use his sample to predict the following.

| Color | Percent |
|---|---|
| Hulk | 8 |
| Wolverine | 24 |
| Iron Man | 18 |

If there are 400 7th graders at Generic MS…

a. Predict how many students favorite hero is Hulk.

Hulk → $\frac{8}{50} = \frac{x}{400}$ $x = 64$ 7th graders

total →

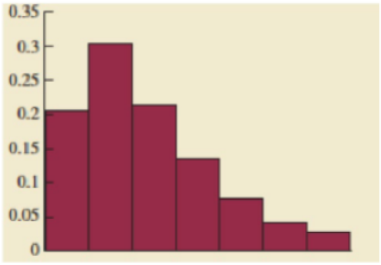
b. Predict how many students favorite hero is Iron Man.

Iron Man → $\frac{18}{50} = \frac{x}{400}$ $x = 144$ 7th graders

total →

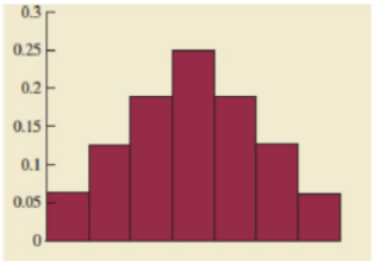
**Describe each distribution as Normal, Skewed Right, Skewed Left, Uniform or Bimodal**

5.



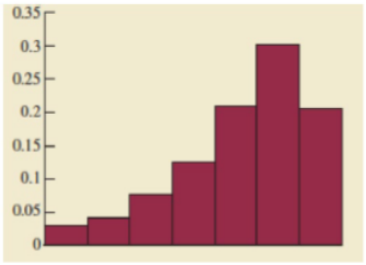

Skewed Right

6.




Normal

7.

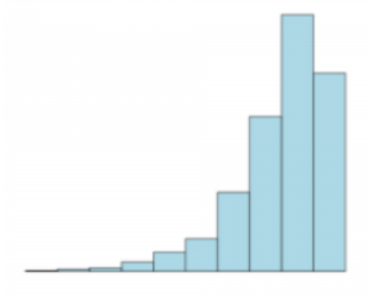



Skewed Left

8.

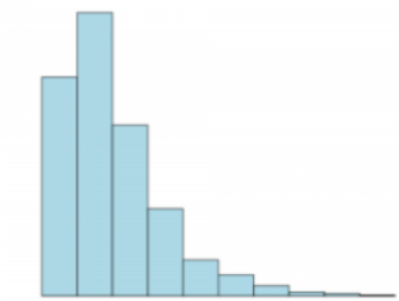
Bimodal

9.



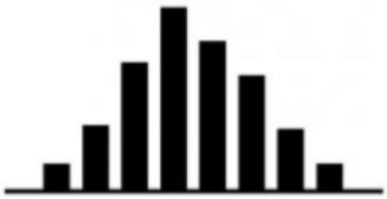
Skewed Left

10.



Skewed Right

11.

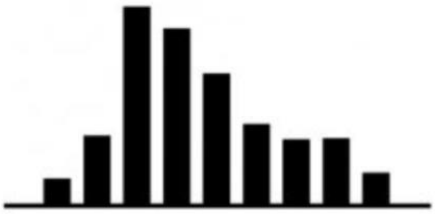


Normal

12.

Uniform

13.

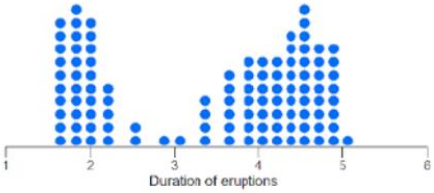


Skewed Right

14.

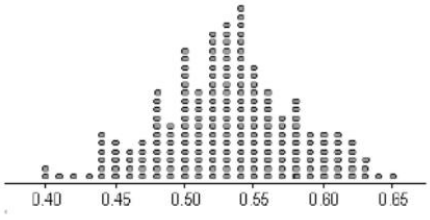

Skewed Right

15.




Bimodal

16.




Normal

**Use the data to answer the following.**

17. Bob teaches karate. He looks over his list of students enrolled in his class to see their ages.

8, 16, 6, 7, 8, 8, 15, 18, 9, 16, 15, 16, 6, 8, 16, 8, 18, 7

a. Make a dot plot of the data.

NOTE: Don't skip numbers

5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

b. Describe the distribution of data.

Bimodal

c. Write a sentence or two describing the age of students in Bob's karate class.

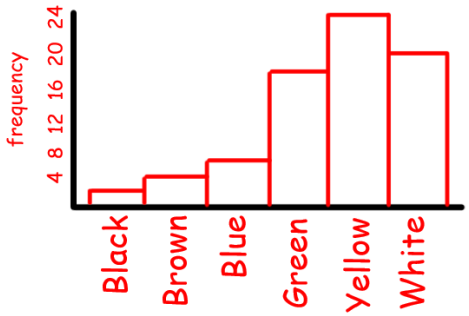
Student's in Bob's karate class tend to fall into two groups of ages.

One group is around 6-9 years old and the other group is around 15-19 years old.

18. Bob teaches karate. He looks over his list of students enrolled in his class to see their ability.
NOTE: Color of belt ranks ability from best (black belt = expert) to worst (white belt = novice)

| Belt Color | # |
|---|---|
| Black | 2 |
| Brown | 4 |
| Blue | 7 |
| Green | 18 |
| Yellow | 24 |
| White | 20 |

a. Make a bar graph of the data.




b. Describe the distribution of data.

Skewed Left NOTE: If you ordered the colors differently the distribution will be different!

c. Write a sentence or two describing the age of students in Bob's karate class.

Most students in Bob's karate class are lower level belts like green, yellow, and white