

1. The distance from Reemi's lake cottage to 20 towns are given in the table. Create a histogram and sketch the plot. Have a bin width of 10, starting at 5. Summarize the center and spread of the data using either the mean and standard deviation or the five-number summary. Justify your choice.

Distances to Towns				
75	31	49	75	65
87	7	68	82	61
64	83	71	66	46
83	52	90	89	12

2. People from two professions were asked how much they paid for their work cell phone. Construct a histogram and use it to describe the shape of the distribution.

Cell Phone Prices (\$)				
50	50	55	55	55
60	60	60	60	60
65	70	90	95	95
100	100	100	100	100
100	105	105	105	

3. The table gives the frequency distribution of weights of football players from 11 teams. Construct a probability distribution table of the data.

Weight Range (lb)	Frequency
121-140	46
141-160	120
161-180	135
181-200	130
201-220	70
221-240	40
241-260	34
261-280	13

4. The table shows the probability distribution from an evaluation of job performance. Employees earned a score from 1 to 3, with a 1 being poor and 3 being fabulous. Find the mean score and interpret its meaning in the context of the problem situation.

<b>Rating, <math>X</math></b>	1	2	3
<b><math>P(X)</math></b>	0.19	0.22	0.59

5. A rating survey was conducted about the ease of using an online shopping site. The results are shown in the table. Use the frequency distribution to construct and graph a probability distribution. Then find the mean, variance and standard deviation.

<b>Rating, <math>X</math></b>	0	1	2	3
<b>Frequency</b>	5	9	28	42

6. An open-air restaurant on the beach loses \$80,000 per season when the weather is rainier than usual and makes \$540,000 when the weather is normal. If the probability of having weather that is rainier than normal this season is 24%, find the restaurant's expected profit.
7. The heights of 40 peaks in a mountain range are normally distributed with a mean of 10,200 feet and a standard deviation of 295 feet. Approximately how many peaks are more than 10,495 feet tall?
8. Find  $z$  if  $X = 36$ ,  $\mu = 40$ , and  $\sigma = 6$
9. Find  $X$  if  $z = 1.5$ ,  $\mu = 1.3$ , and  $\sigma = 0.6$
10. A salesperson keeps a record of the phone calls he makes to prospective clients. Over a 60-day period, his average calls-per-day is 20 with a standard deviation of 4. Find the number of days in which the salesperson made more than 25 calls. (assume normally distributed)
11. A teller kept track of the number of people she waited on at the drive-up window each day. Over 50 days the average number of people was 48 with a standard deviation of 9. Find the number of days the teller waited on more than 60 people.
12. Find the interval of  $z$ -values associated with the middle 45% of the data.
13. Find the interval of  $z$ -values associated with the outer 24% of the data.
14. The number of cars that pass through one intersection during a specific hour of the day is normally distributed with  $\mu = 1210$  and  $\sigma = 220$ . What is the probability that the number of cars pass through the intersection on a specific day is between 1000 and 1420.
15. Maximum bench press weights (in pounds) in a local gym are normally distributed with  $\mu = 265$  and  $\sigma = 45$ . If a weightlifter wants to be in the top 33%, what weight must he press?
16. The table shows the number of medical tests that 15 randomly selected patients entering a particular hospital received one day.

Tests, $X$	Frequency
0	6
1	5
2	3
3	1

- Construct a probability distribution for  $X$ .
- Find and interpret the mean in the context of the problem situation. Find the variance and the standard deviation.

17. On his last 20 airline trips, an employee had an average layover of 82 minutes. With a standard deviation of 7.5 minutes. Find the number of layovers that were less than 75 minutes.