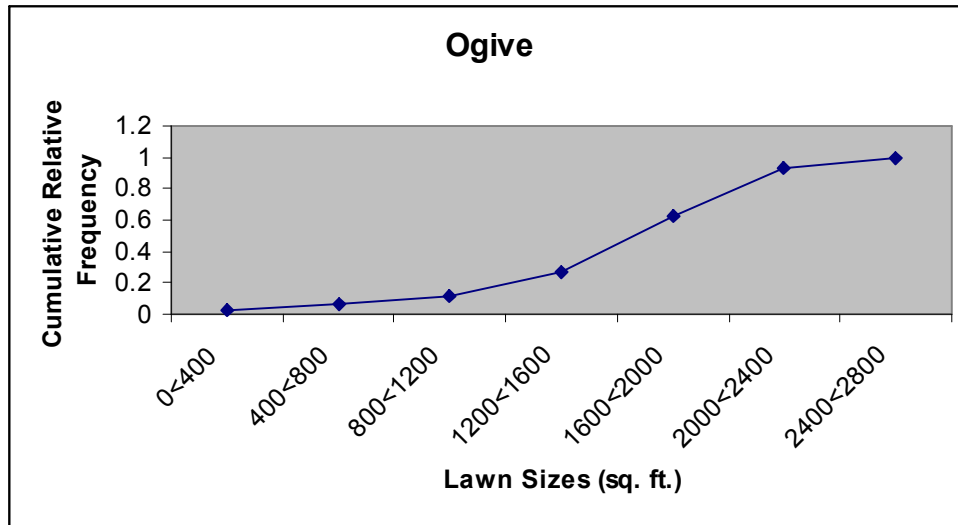Problems:

1.53:   a) your income for the last year **cross-sectional**
         b) weekly defect rate for one assembly line over past 52 weeks **time-series**
         c) yeary size of the population of your city since 1970 **time-series**
         d) customer bank balances on December 1 **cross-sectional**
         e) students' grade point averages for the 1999 fall term **cross-sectional**
         f) annual student enrollment from 1970 to 2000 **time-series**

1.60:   a) This type of phone-in survey would not be a random sampling. This would be a convenience
         sampling, as only those who wanted to respond would call in to the station.
         b) The bias in this type of data collection is that only people with strong opinions on the issue may
         call in to respond. There may also be people who are unable to call in because they do not have a
         phone or have some other reason for not taking the time and effort to respond.
         This bias may be reduced if the station took some time to do a more random sampling of viewers
         such as calling or mailing out surveys, or interviewing a sampling of people around the area.
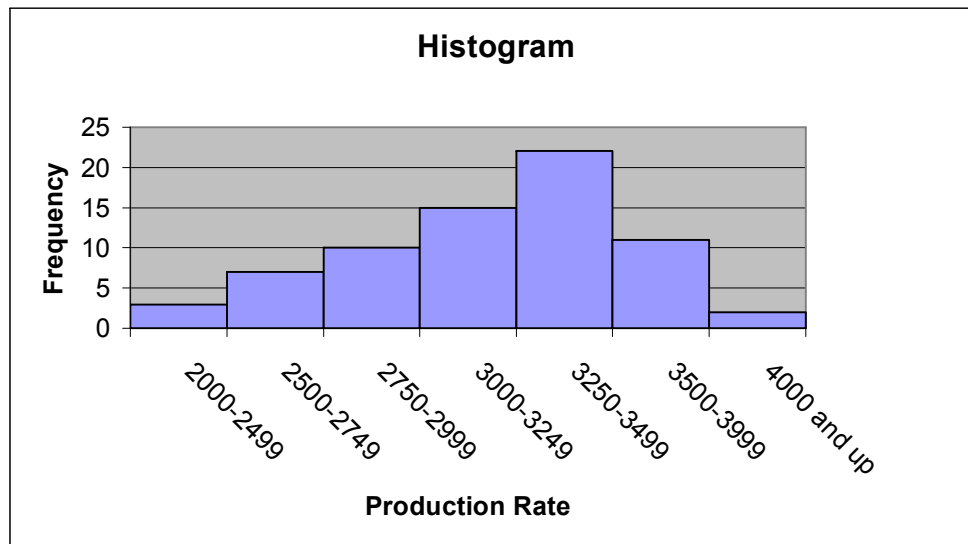
2.49:   Green Glow Lawn Company
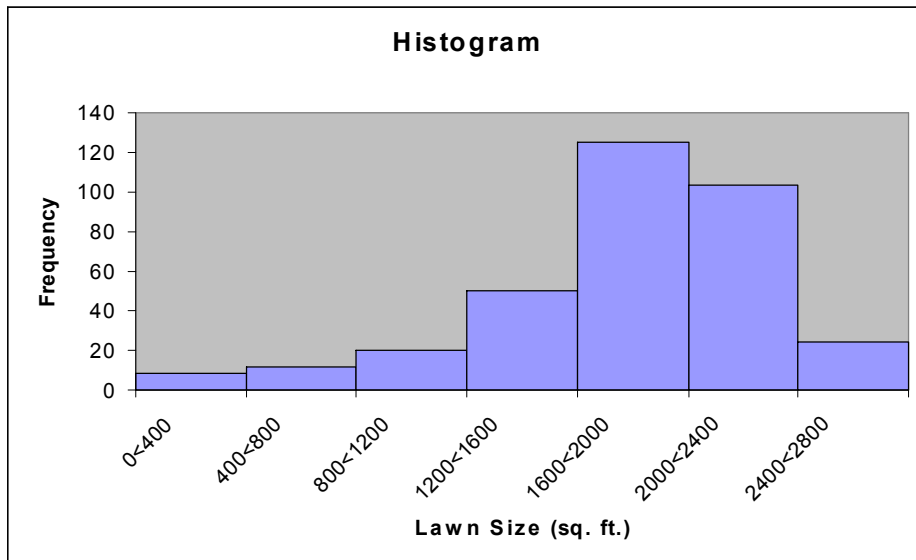
Lawn Size (sq. ft.)	Frequency	Relative Frequency	Cumulative Relative Frequency
0<400	8	0.0234	0.0234
400<800	12	0.0351	0.0585
800<1200	20	0.0585	0.1170
1200<1600	50	0.1462	0.2632
1600<2000	125	0.3655	0.6287
2000<2400	103	0.3011	0.9298
2400<2800	24	0.0702	1.0000
Totals	342	1.0000	

It is important to convert the frequency to relative frequency in order to make an easier
comparison between data. This is especially helpful when you are comparing frequencies of two
different sets of frequencies.

Ogive

Ogive

Cumulative Relative Frequency vs. Lawn Sizes (sq. ft.)

Y-axis: Cumulative Relative Frequency (0, 0.2, 0.4, 0.6, 0.8, 1, 1.2)

X-axis: 0<400, 400<800, 800<1200, 1200<1600, 1600<2000, 2000<2400, 2400<2800

2.56: Disk Drive Manufacturing

Production Rate	Frequency
2000-2499	3
2500-2749	7
2750-2999	10
3000-3249	15
3250-3499	22
3500-3999	11
4000 and up	2

Histogram

Histogram

Y-axis: Frequency (0, 5, 10, 15, 20, 25)

X-axis: 2000-2499, 2500-2749, 2750-2999, 3000-3249, 3250-3499, 3500-3999, 4000 and up

Production Rate

By examining a histogram, you can get a visual indication of where the center of the data lies, gain understanding of the degree of the variation in the data, and can observe the shape of the distribution.

It would not be possible to construct a stem and leaf diagram from this data, as we do not have each of the production rates given for each frequency. We only have data for the ranges of production rates.