

### Answer on Question #44230, Math, Statistics and Probability

2.19 Recall that 60 randomly selected shoppers have rated a new bottle design for a popular soft drink. The data are given below.

34 33 33 29 26 33 28 25 32 33  
 32 25 27 33 22 27 32 33 32 29  
 24 30 20 34 31 32 30 35 33 31  
 32 28 30 31 31 33 29 27 34 31  
 31 28 33 31 32 28 26 29 32 34  
 32 30 34 32 30 30 32 31 29 33

- a. Construct a relative frequency distribution and a percent frequency distribution for the bottle design ratings.
- b. Construct a cumulative frequency distribution and a cumulative percent frequency distribution.
- c. Draw a frequency ogive for the bottle design ratings.

**Solution.**

a.

	22	24	25	26	27	28	29	30	31	32	33	34	35	Total
Frequency	1	1	2	2	3	4	5	7	8	11	10	5	1	60
Relative frequency	0.017	0.017	0.033	0.033	0.050	0.067	0.083	0.117	0.133	0.183	0.167	0.083	0.017	1
Percent frequency	1.667	1.667	3.333	3.333	5.000	6.667	8.333	11.667	13.333	18.333	16.667	8.333	1.667	100

b.

	22	24	25	26	27	28	29	30	31	32	33	34	35
Frequency	1	1	2	2	3	4	5	7	8	11	10	5	1
Cumulative frequency	1	2	4	6	9	13	18	25	33	44	54	59	60
Cumulative percent frequency	0.017	0.033	0.067	0.100	0.150	0.217	0.300	0.417	0.550	0.733	0.900	0.983	1

c.

