

ANSWERS TO EVEN-NUMBERED EXERCISES

CHAPTER 1: INTRODUCTION TO STATISTICS

2.
 - a. IV: Type of advertisement; DV: Perception of quality of product
 - b. IV: Frequency of punishment; DV: Reported problem behaviors
 - c. IV: Type of eating disorder; DV: Level of respect
 - d. IV: Use of humor; DV: Product recognition
 - e. IV: Time in daycare; DV: Exploratory behavior
 - f. IV: Content of test item; DV: Test score
4.
 - a. Ratio
 - b. Nominal
 - c. Interval
 - d. Ordinal
 - e. Nominal
6.
 - a. Example hypothesis: Students with higher SAT scores will have higher GPAs in college.
 - b. IV: SAT score; DV: College performance
 - c. Example of nominal: Received college degree vs. did not receive degree
Example of ordinal: Rank-ordering of students
Example of interval: Rating of student (1 [low] to 10 [high])
Example of ratio: Initial income after graduation

CHAPTER 2: EXAMINING DATA: TABLES AND FIGURES

2.
 - a. Histogram or frequency polygon
 - b. Bar chart or pie chart
 - c. Bar chart or pie chart
 - d. Histogram or frequency polygon
 - e. Bar chart or pie chart
 - f. Bar chart or pie chart

4.

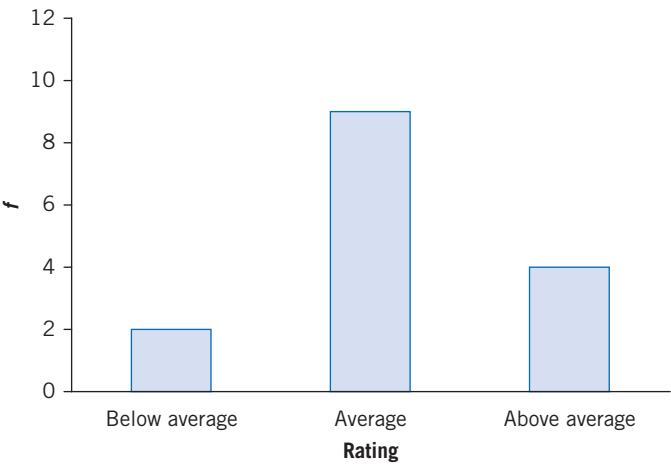
Political Affiliation	<i>f</i>	%
Democrat	28	33%
Republican	25	30%
Other	8	10%
Independent	13	15%
No affiliation	10	12%
Total	84	100%

6. a. 2
b. 15%

8. a.

Rating	<i>f</i>	%
Below average	2	13%
Average	9	60%
Above average	4	27%
Total	15	100%

- b. Ordinal
c. Bar chart



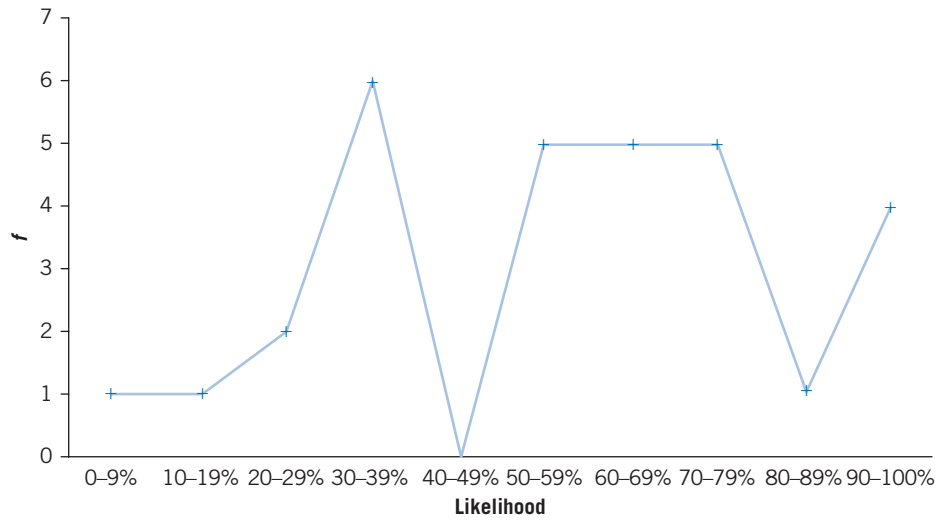
10. a.

Likelihood	<i>f</i>	%
90%–100%	4	13%
80%–89%	1	3%
70%–79%	5	17%
60%–69%	5	17%
50%–59%	5	17%
40%–49%	0	0%
30%–39%	6	20%
20%–29%	2	7%

Likelihood	<i>f</i>	%
10%–19%	1	3%
0%–9%	1	3%
Total	30	100%

b. Ratio

c. Frequency polygon



d.

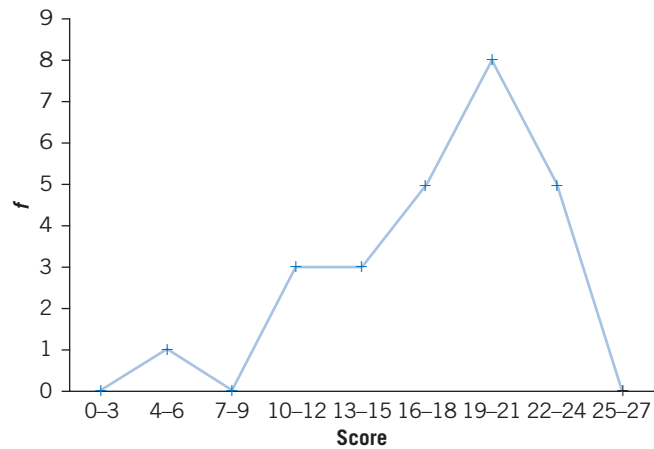
Likelihood	<i>f</i>	%
67%–100%	10	33%
34%–66%	10	33%
0%–33%	10	33%
Total	30	100%

e. Grouping the ratings into only three categories gives the impression people's ratings are equally distributed when in fact there is a fair amount of variability.

12. a.

Score	<i>f</i>	%
25–27	0	0%
22–24	5	20%
19–21	8	32%
16–18	5	20%
13–15	3	12%
10–12	3	12%
7–9	0	0%
4–6	1	4%
0–3	0	0%
Total	30	100%

- b. Ratio
- c. Frequency polygon

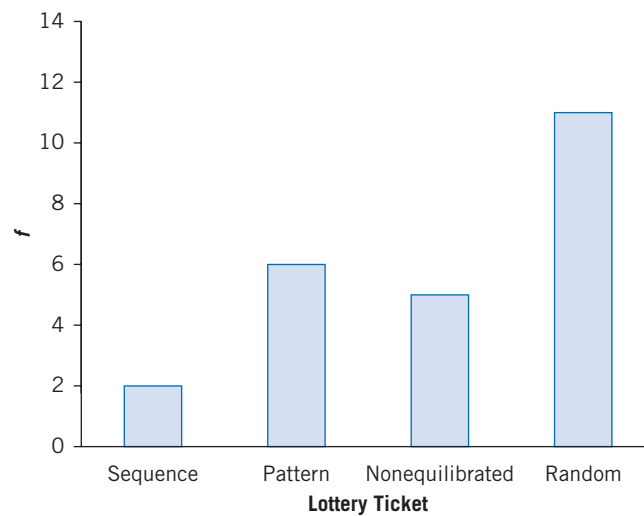


- d. The distribution is negatively skewed.
- e. The students generally did well on the quiz, suggesting that the quiz was easy.

14. a.

Lottery Ticket	<i>f</i>	%
Sequence	2	8%
Pattern	6	25%
Nonequilibrated	5	21%
Random	11	46%
Total	24	100%

b. Bar chart



- c. The problem gamblers chose the random pattern (46%) much more often than the other three types; the sequential pattern (8%) was chosen the least often.
- d. The problem gamblers had a slightly lower preference for the random pattern and a higher preference for the nonequilibration pattern than the non-problem gamblers, suggesting that problem gamblers are less likely to believe lottery numbers are selected randomly.

16. a.

Likelihood	<i>f</i>	%
Definitely	16	26%
Probably	36	57%
Probably not	9	14%
Definitely not	2	3%
Total	63	100%

- b. When told that 99% of patients do not have any complications, most of the participants (83%) would either “definitely” or “probably” undergo the medical procedure.

18. a. Bimodal

b. Unimodal

c. Unimodal

d. Bimodal

20. a. Peaked

b. Flat

c. Peaked

d. Flat

CHAPTER 3: MEASURES OF CENTRAL TENDENCY

2. a. $Mo = 6$ b. $Mo = 13$ c. $Mo = 2$ and 5 d. $Mo = 10$ e. $Mo = 1$ and 4 4. a. $Mdn = 4$ b. $Mdn = 13$ c. $Mdn = 10$ d. $Mdn = 8$ e. $Mdn = 14.50$ f. $Mdn = 5.25$ 6. a. $\bar{X} = 2.00$ b. $\bar{X} = 5.00$ c. $\bar{X} = 62.83$ d. $\bar{X} = .48$ e. $\bar{X} = 12.90$ f. $\bar{X} = 10.42$ 8. a. $\bar{X} = 2.69$ b. $\bar{X} = 3.12$