

Chapter 1 Practice Solutions

Section 1.1

1. a. Qualitative, b. Quantitative, c. Quantitative
2. a. Population is students enrolled in college. Sample is students enrolled at the University of Arizona, b. Population is registered voters in the United States. Sample is registered voters likely to vote in the United States
3. a. The statistic is 89.6% and the parameter is 79.4%. b. The average height of Americans is a parameter and the average height of women in America is a statistic.
4. a. continuous, b. discrete

Section 1.2

1. $\frac{6}{5}$
2. $-\frac{2}{3}$
3. a. Convenience sampling. b. Stratified sampling. c. Systematic sampling. d. Cluster sampling. e. Simple random sampling
4. a. Loaded question bias. b. Perceived lack of anonymity. c. Loaded question. d. Self-interest bias
5. Treatment group is pregnant women who take folic acid. Treatment is taking folic acid. Control group is pregnant women who do not take folic acid.
6. a. Yes, an inactive pill that appears to look like folic acid could be administered. b. No, you cannot hold pain medication for a dental extraction.

Section 1.3

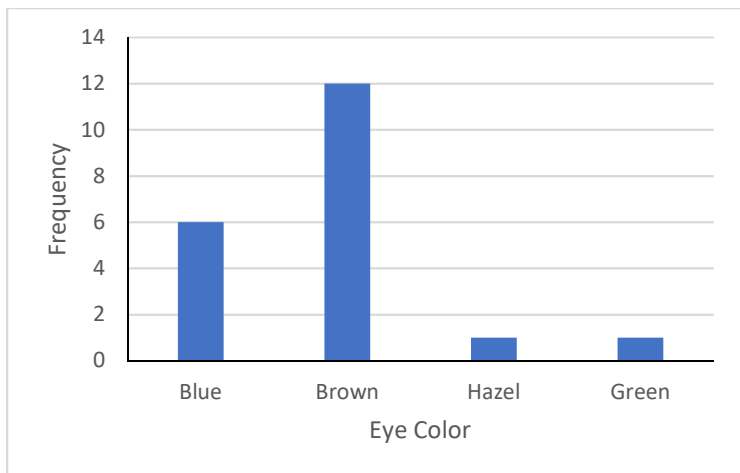
1. a. \geq b. \leq
2. a. $[-5, 2)$, b. $[-3, 2)$
3. a.

Color	Frequency
Blue	6
Brown	12
Hazel	1
Green	1

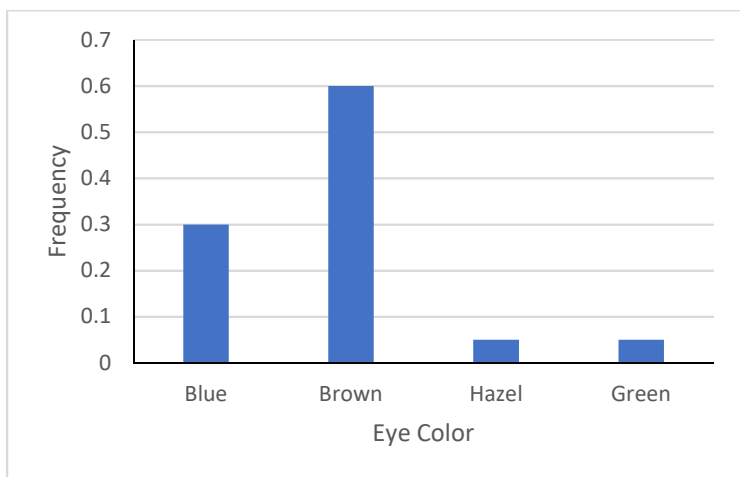
b.

Color	Frequency
Blue	0.3
Brown	0.6
Hazel	0.05
Green	0.05

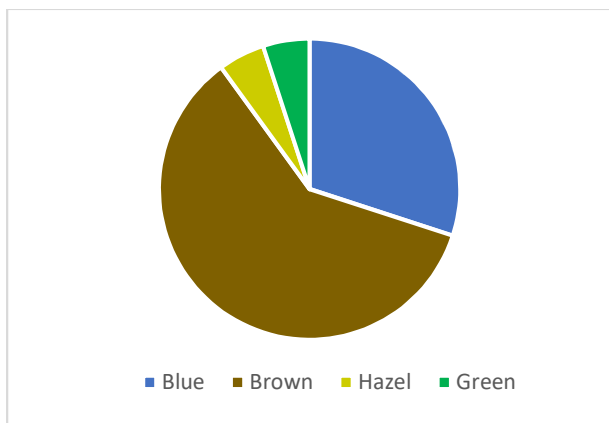
4. a.



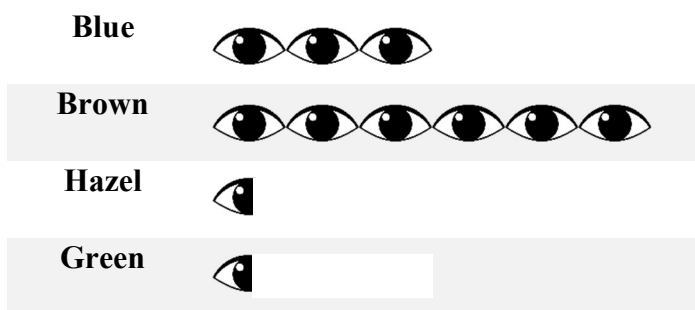
b.



c.

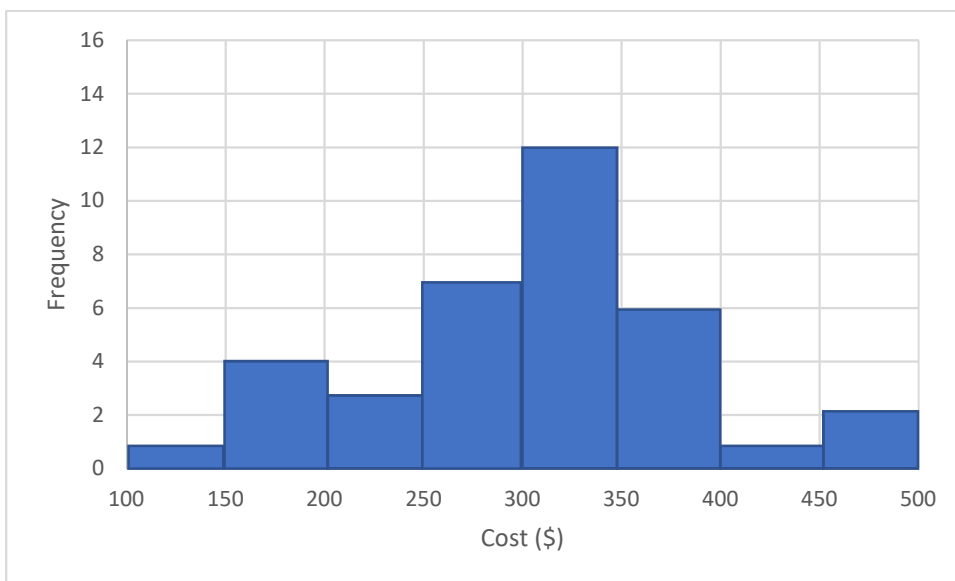


d.



👁️ = 2 people

5.

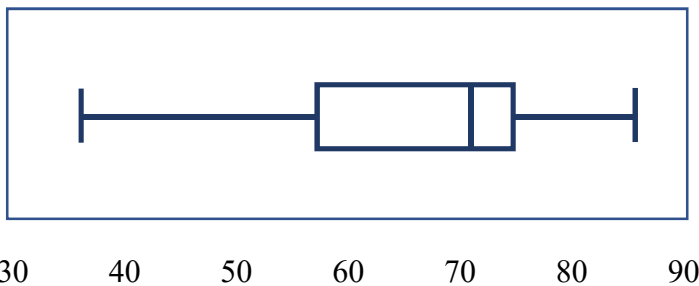


Section 1.4

1. 1002.14
2. 13.2
3. 17.4%
4. 40%
5. 11.1̄%
6. a. $0.2 = \frac{2}{10}$, b. $0.04 = \frac{4}{100}$
7. a. approximately 65.3, b. 71, c. 71, 73
8. a. 67.125, b. 71.5, c. 71, 73
9. mode = brown
10. a. approximately 8.2, b. 8, c. 8
11. 2.8
12. a. 4 or 5, b. approximately 1.5, c. 1, d. 0

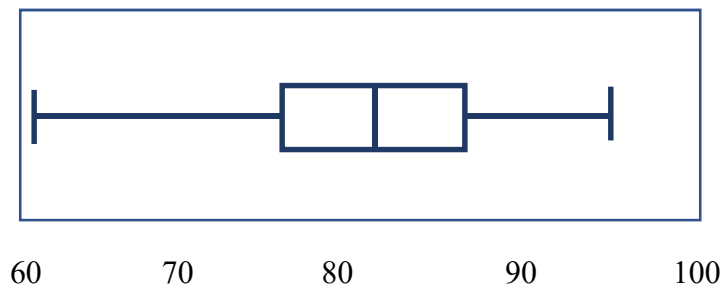
Section 1.5

1. a. $x = \frac{-3y+30}{10}$, b. $h = \frac{A-b}{2b}$ or $h = \frac{A}{2b} - \frac{1}{2}$, c. $b = \frac{A}{2h+1}$, d. $x = z\sigma + \mu$
2. 50
3. a. Ball B has higher values so mean is higher, b. Mean of Ball A is 76.8125 and mean of ball B is 83.875, c. Ball B values are more spread out so the standard deviation is higher, d. The standard deviation of Ball A is 10.67 and the standard deviation of Ball B is 11.51.
4. No, you only know that 95% of scores were the same or lower.
5. a. Minimum = 36, $Q_1 = 58$, Median = 71, $Q_3 = 75$, Maximum = 86, b. 17, c.



6. a. Minimum = 61, $Q_1 = 77$, Median = 82.5, $Q_3 = 86$, Maximum = 94, b. 9,

c.



Section 1.6

1. a. 68%, b. 34%, c. 99.7%, d. 16%
2. a. 50%, b. 16%
3. a. 2.7, the score is 2.7 standard deviations above the mean, b. -1.3, the score is 1.3 standard deviations below the mean.
4. a. 77, b. 46
5. Minimum = 35, $Q_1 \approx 58.3$, Median = 65, $Q_3 \approx 71.7$, Maximum = 95
6. 19.15%
7. 9.66%
8. 10.56%