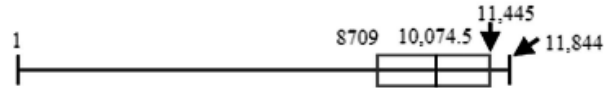


Section 3-4

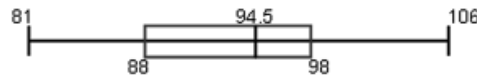
9. Z scores of -2 and 2 . A z score of -2 means a score of $x = -2 \cdot 15 + 100 = 70$. A z score of 2 means a score of $x = 2 \cdot 15 + 100 = 130$

11. Two standard deviations from the mean: $1.240 - 2 \cdot 0.578 = 0.084$ and $1.240 + 2 \cdot 0.578 = 2.396$

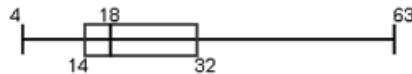
29. The five number summary: 1 sec, 8709 sec, 10,074.5 sec, 11,445 sec, 11,844 sec



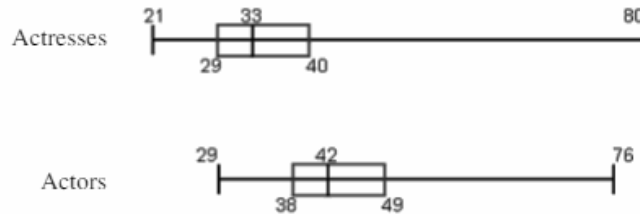
30. The five number summary: 81 min, 88 min, 94.5 min, 98 min, 106 min



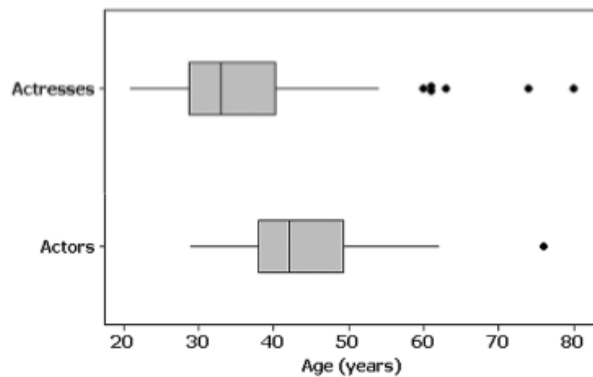
31. The five number summary : 4 min, 14 min, 18 min, 32 min, 63 min



34. Although actresses include the oldest age of 80 years, the boxplot for actresses shows that they have ages that are generally lower than those of actors.



37. Outliers for actresses 60 years, 61 years, 63 years, 70 years, and 80 years. Outliers for actors: 76 years. The modified boxplots show that only one actress has an age that is greater than any actor.



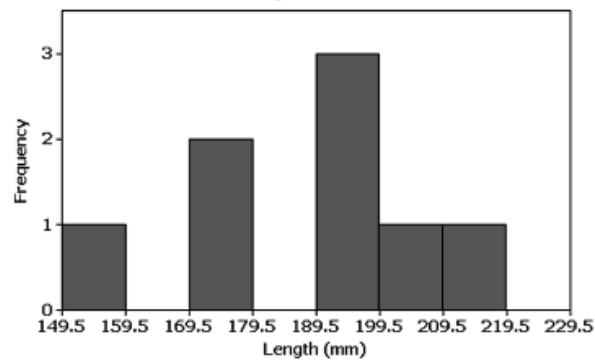
Cumulative Review Exercises

- a. Continuous
b. Ratio

2.

Hand Length (mm)	Frequency
150 – 159	1
160 – 169	0
170 – 179	2
180 – 189	0
190 – 199	3
200 – 209	1
210 – 219	1

3. Hand length histogram



Section 4-2

1. $P(A) = \frac{1}{10,000} = 0.0001$, $P(\bar{A}) = 1 - \frac{1}{10,000} = \frac{9999}{10,000} = 0.9999$

6. $\frac{1}{4}$ or 0.25

7. $\frac{1}{5}$ or 0.2

16. $\frac{1}{2}$ or 0.5

37. $\frac{3}{8}$ or 0.375

38. $\frac{3}{8}$ or 0.375

Section 4-3

- Disjoint
- Not disjoint
- Not disjoint
- Not disjoint

12. Disjoint

$$18. \frac{44 + 90 + 860}{1000} = 0.994$$

$$19. \frac{90 + 860 + 6}{1000} = 0.956$$

Section 4-4

10. a. Independent

b. $\frac{1}{100}$ or 0.01

12. a. Dependent

b. $\frac{8}{100} \cdot \frac{7}{99} = 0.00566$

13. a. $\frac{90}{1000} \cdot \frac{90}{1000} = 0.0081$. Yes, it is unlikely

b. $\frac{90}{1000} \cdot \frac{89}{999} = 0.00802$. Yes, it is unlikely

15. a. $\frac{904}{1000} \cdot \frac{904}{1000} \cdot \frac{904}{1000} = 0.739$. No, it is not unlikely

b. $\frac{904}{1000} \cdot \frac{903}{999} \cdot \frac{902}{998} = 0.739$. No, it is not unlikely

16. a. $\frac{860}{1000} \cdot \frac{860}{1000} \cdot \frac{860}{1000} \cdot \frac{860}{1000} = 0.547$. No, it is not unlikely

b. $\frac{860}{1000} \cdot \frac{859}{999} \cdot \frac{858}{998} \cdot \frac{857}{997} = 0.546$. No, it is not unlikely

18. $\frac{708}{810} \cdot \frac{707}{809} \cdot \frac{706}{808} \cdot \frac{705}{807} = 0.583$. The scheme is not likely to detect the large number of defects. With a probability of 0.583, it is more likely that the entire batch will be accepted.

Section 4-5

11. 0.5 or 50%

12. $\frac{1}{5}$ or 0.2

13. $1 - (0.512)^5 = 0.965$

16. a. $1 - (1 - 0.124)^5 = 0.484$

b. $(0.124)^5 = 0.0000293$

c. The detective is much better than average, or the detective was given five easy cases.