Lesson #8 · Topic 1D · Practice

Answer Key

1. a. 440 feet. Subtraction.
   b. Mean = 229.04 feet. Standard deviation = 125.53 feet.
   c. Minimum = 11 feet, Q_1 = 126 feet, Median = 259 feet, Q_3 = 310.5 feet, Maximum = 440 feet.
   d. The median is 14,000 feet less and the IQR is the same (184.5 feet).

2. a. $\$4.49 \times \$1.06 = \$4.76$. Multiplication.
   b. Same shape as the original prices - bimodal with a gap.
   c. Mean = $3.13. Standard deviation = $1.62.
   d. Median = $3.91. IQR = $3.34

3. a. Same shape as temperatures in degrees Fahrenheit – fairly symmetric.
   b. Mean = 32.13°C. Standard deviation = 1.23°C.

4. a. $z = 0.75$. Patrick Mahomes' quarterback rating is 0.75 standard deviations above the mean of 54.37.
   b. First, subtract the mean (54.37) from his quarterback rating. Then divide by the standard deviation (11.55).
   c. Shape would be the same as the quarterback rating – skewed left. The mean would be 0 and the standard deviation would be 1.

5. a. $z = 2.42$

   b. $7.49 \times 3.28 = 24.57$ feet

   c. Mean = 23.616 feet. Standard deviation = 0.3936 feet.

   d. $z = 2.42$. The z -score is the same as when units were measured in meters.

6. a. Variance = 3.0^2 = 9.0 dozen eggs squared.

   b. Mean = 176.4 eggs. Standard deviation = 36.0 eggs.

   c. Variance = $36.0^2 = 1,296 \text{ eggs}^2$

   d. It is 12^2 = 144 times larger.

7. a. $10.5 + 1.5 \times 8 = 22.5$. Yes, 23 miles is an outlier.

   b. $79.75

   c. Q_1 = 13.125, Q_3 = 39.125

   d. $39.125 + 1.5 \times 26 = 78.125$. Yes, $79.75 is an outlier.

8. B