

1.
  - a. Yes. The scatterplot of the data shows a linear trend. The residual plot shows a random scatter among the residuals. The  $r^2$  value is fairly close to 1.
  - b. About 79.5% of the variation in weight can be explained by the linear relationship with height.
2.
  - a.  $r^2 = 0.427$ . About 42.7% of the variation in highway fuel economy can be explained by the linear relationship with the weight.
  - b.  $s = 2.117$ . The actual highway fuel economy typically varies by about 2.117 mpg from the predicted highway fuel economy.
  - c.  $SE_b = 0.001$ . The slope of the sample regression line typically varies by about 0.001 mpg/pound from the slope of the population regression line.
3.
  - a. 24.567 mpg
  - b. 4.433 mpg
4.  $-0.928$
5. B