Pre-Test

1a. $f(x) = 97x + 8668$, where x represents the game number.
The slope represents the change in the number of people who attended each game. For each subsequent game played, 97 more people attended. The y-intercept represents the number of people that attended Game 0, which does not make sense in the problem situation.

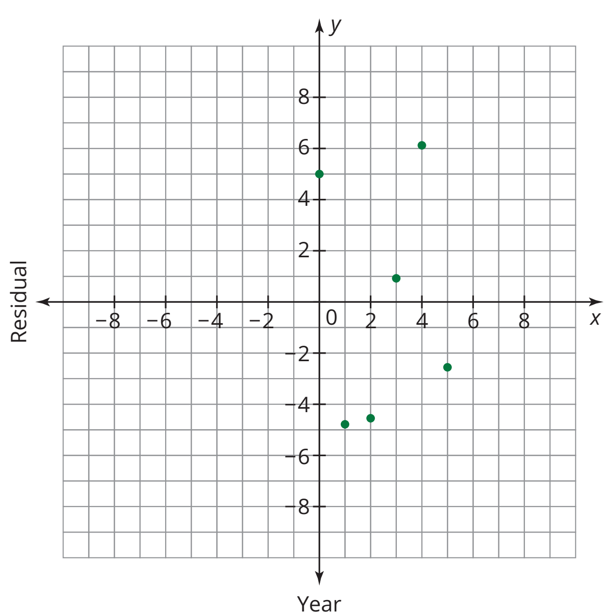
1b. $r \approx 0.921$; the r-value tells me that the line is a good fit with the data.

1c. The attendance for Game 12 will be 9832. I substituted 12 for x in the linear regression equation and simplified.

2a.

Year	Number of Students	Predicted Number of Students	Residual Value
0	22	$y = 13.7(0) + 17.0 = 17.0$	$22 - 17.0 = 5$
1	26	$y = 13.7(1) + 17.0 = 30.7$	$26 - 30.7 = -4.7$
2	40	$y = 13.7(2) + 17.0 = 44.4$	$40 - 44.4 = -4.4$
3	59	$y = 13.7(3) + 17.0 = 58.1$	$59 - 58.1 = 0.9$
4	78	$y = 13.7(4) + 17.0 = 71.8$	$78 - 71.8 = 6.2$
5	83	$y = 13.7(5) + 17.0 = 85.5$	$83 - 85.5 = -2.5$

2b.



2c. Yes. The residual plot indicates that a linear model may be a good fit for the data because there is no pattern in the residual plot, or because the points are randomly dispersed.

3. Answers will vary.

Fewer people are outside in the rain, so there are fewer potential customers.

People who are outside in the rain are rushing to their destinations and less likely to stop and buy items.

4. Answers will vary.

The people who reduced the fat in their diet might also have exercised more, leading to lower blood pressure.

The people who ate a higher-fat diet might have eaten more processed food, and those who ate a reduced fat diet might also have eaten more fruits and vegetables that reduced their blood pressure.