**Answer Key**

1. 1. According to a residual vs. fits plot, the variance is strong.
   2. The plots scatter plot shows decent linearity.
   3. Both the histogram of residuals and the normal quantile plot show strong normality for the model.
2. 1. Correlation = -0.8916629
   2. There is a strong negative correlation between Speed1 and Rank4, meaning that when the Speed at the first interval is higher, the rank at the Finish is lower.
3. For each individual increase in Bib number, a skier’s final rank decreases by 0.05409 provided that their speed is kept constant.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Source** | **D.F.** | **S.S.** | **M.S.** | **F-Stat** | **P-value** |
| **Name** | 59 | 0.0354 | 0.0006 | 16.25 | <2 \* 10-16 |
| **Speed Interval** | 3 | 1.8441 | 0.6147 | 16646.91 | <2 \* 10-16 |
| **Residuals** | 173 | 0.0064 | 0.0000 |
| **Total** | 60 | 1.8859 |

**Factor A:**

**Conclusion:** Reject H0

We see convincing evidence that the mean speed for each speed interval is considerably different.

**Factor B:**

**Conclusion:** Reject H0

We see convincing evidence that the mean speed for each skier is considerably different.