**AP Statistics Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 **Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per\_\_\_\_\_**

**Ebola Outbreak Analysis**



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Guinea | Liberia | Sierra Leone | **C:\Users\CohenJ\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\2FMO1BB3\MC900326944[1].wmfTotal** |
| Mar | 122 | 8 | 2 | **132** |
| Apr | 224 | 35 | 2 | **261** |
| May | 291 | 102 | 52 | **445** |
| Jun | 413 | 209 | 241 | **863** |
| Jul | 460 | 431 | 535 | **1426** |
| Aug | 771 | 1800 | 1218 | **3789** |
| Sept | 1074 | 3458 | 2021 | **6553** |

1. Using March as “Month 1,” enter the data for the **Total** into your calculator and sketch the scatterplot and residual plot. Be sure to label your axes.
2. Write the equation of the LSRL in context.
3. What is the r-value? Is an LSRL the best model for this situation? Explain using both graphical and numeric evidence.
4. One expert from the World Health Organization (WHO) is now saying that they think the outbreak is following an exponential function. Linearize the data appropriately for an exponential function and plot the new scatterplot. Also, find the new correlation coefficient.
5. Another expert from the Center for Disease Control (CDC) thinks the outbreak is following a power function. Linearize the data appropriately for a power function and plot the new scatterplot. Also, find the new correlation coefficient.
6. Which expert (WHO or CDC) do you think is right? Explain.
7. Write the equation of the LSRL of the transformed data for the better model.
8. Find and interpret r and r-squared.
9. Assuming the number of confirmed cases continue to grow along the same path, use your transformed linear regression equation to predict the number of cases in December of the same year.