AP Stats: Spring Break Name:

It’s time to plan for Vacation!!

Below are some possible destinations to consider for spring break as well as the mileage and round trip cost (yes, you have to come home….). Use the information provided to answer the following questions.

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| **Destination** | **Distance 1 way (miles)** | **Roundtrip Cost ($)** |
| Miami FL | 1145 | 434 |
| San Diego CA | 1957 | 528 |
| San Juan PR | 1929 | 542 |
| New York City NY | 501 | 378 |
| Chicago IL | 237 | 365 |
| Seattle WA | 1938 | 434 |
| Salt Lake City UT | 1477 | 394 |
| Boston MA | 613 | 361 |
| Honolulu HI | 4468 | 1163 |
| Denver CO | 1157 | 430 |
| Cancun MX | 1483 | 417 |
| Punta Cana DR | 1850 | 401 |
| Houston TX | 1074 | 171 |
| Las Vegas NV | 1478 | 196 |
| Nashville TN | 457 | 227 |

1. Make a scatter plot of the distance vs. cost.



1. Describe the association of the scatterplot:
2. Use a straight edge to draw the line of best fit to the data (LSRL).
3. Estimate the equation for the line (using y-intercept and slope)
4. On a scale of 0 to 1 estimate how good the line fits the data (0 = no fit and 1 = perfect fit)
5. Find the equation for the LSRL between distances and cost. Compare your answers from you estimate in question 4. How close were you?
6. Calculate the correlation (get it from your calculator; you don’t need to fill out all the lists. How close was your estimate?
7. Use the equation for the LSRL and calculate the residuals for every city (you can add a column to the table on the front page).
8. Which data point has the largest residual?\_\_\_\_\_\_\_\_\_\_\_\_ How could you even before you calculated it?
9. Create a residual plot:
10. Based on the residual plot comment on whether or not a LSRL is the best model for the data.
11. Based on your calculations, which is the best deal (comparing miles to cost)?