

Exam 1

Name: _____ PID4: _____

Show All Work!

GDP Per Capita	Total Fertility Rate
22.4	1.46
14.1	2.34
2.5	2.68
19.1	1.35
22.6	1.29
18.0	1.61
2.3	2.76
9.7	2.10
7.4	1.30
3.8	1.80

Use the dataset above to complete the following.

1. Create a scatter plot.
2. Calculate the Pearson correlation coefficient.
3. Determine the linear regression equation.
4. Create a residual plot.
5. Calculate R-Squared.

Refer to Part 1 to answer the following questions:

6. Rank your three models in terms of forecast accuracy. Which model is most accurate? Which model is least accurate? Explain your ranking methodology.
7. Select the most extreme **outlier** from each region and list the corresponding country names.
8. Use the last digit of your PID to select your designated region. Circle one option: A, B or C.
 - A. My PID ends in **0, 1, 2 or 3**. I will use the “Americas” model.
 - B. My PID ends in **4, 5 or 6**. I will use the “EMEA” model.
 - C. My PID ends in **7, 8 or 9**. I will use the “Asia Pacific” model.
9. Remove the outlier selected above (see #7) from your designated region (see #8) and **recalculate** the following. **Only one region**, the one designated by your PID in #8, needs to be recalculated.
 - A. Pearson correlation coefficient.
 - B. Equation of the regression line.
 - C. R-squared.
10. What impact did removal of the outlier have on your regional linear model? Explain.