1. Given $y = 3 + 5x$ as an equation for a LSRL, calculate the residual for $y = 18$ at $x = 4$.

2. Calculate $r$, $r^2$ and the equation for the LSRL for:
   
   Quiz Average $X = \{90, 82, 97, 90, 85, 73, 98, 45, 79, 86\}$
   Overall Average $Y = \{87, 80, 95, 70, 88, 72, 95, 52, 80, 82\}$

3. Given the data from problem 3, determine if there is a linear relationship. Justify your answer.

4. Given $r = .9867$, $r^2 = .9736$, and $y = .035 + .72x$, what percent of the change in $y$ is caused by $x$?

5. Which coordinate plane is used for exponential regression?

   A) \[
   \begin{align*}
   \log Y & \quad \log x \\
   \log x & \quad Y
   \end{align*}
   \]
   B) \[
   \begin{align*}
   Y & \quad \log x \\
   \log x & \quad Y
   \end{align*}
   \]
   C) \[
   \begin{align*}
   Y & \quad \log y \\
   \log x & \quad X
   \end{align*}
   \]
   D) \[
   \begin{align*}
   \log y & \quad X
   \end{align*}
   \]

6. Given $\log y = -.058 + 2.36x$, solve for $y$.

7. Given the student population for a school district over the past few years, find the prediction equation for this data:

   Population $(y) = \{1824, 2006, 2086, 2357, 3064, 3676, 4153, 4983\}$