

## Answer on Question #46335 - Math - Statistics and Probability

### Question:

The number of revolutions per minute (x) and power (y) hp of a diesel engine are tabulated below.

x 400 500 600 700 750

y 580 1030 1420 1880 2100

Obtain the regression equation for this data.

### Solution:

The linear regression equation:

$$y = a + bx$$

where  $a$  is the intercept,  $b$  is the slope of the regression line.

$$b = \frac{N \cdot \Sigma xy - (\Sigma x) \cdot (\Sigma y)}{N \cdot \Sigma x^2 - (\Sigma x)^2} = 4.318$$

$$a = \frac{\Sigma y - b \cdot \Sigma x}{N} = -1146$$

where  $N$  is number of values

**Answer:**  $y = 4.318x - 1146$