Answer on Question #82024 – Math – Statistics and Probability

Question

The wages of a group of 5000 workers were found normally distributed with mean of rs800 & SD of rs200. Estimate %and number of workers getting wages above RS 700?

Solution

Denote wages of a worker by X. X has a normal distribution with the mean 800 and std 200. Find a probability of a worker to have wages above RS 700:

$$P(X > 700) = P\left(\frac{X-800}{200} > \frac{700-800}{200}\right) = P(z > -0.5) = 1 - F(-0.5) =$$
$$= 1 - 0.3085 = 0.6915$$

Then the percent of workers with wages above 700 is about 69.15%. The estimated number of workers is

$$5000 \cdot 0.6915 \approx 3458.$$

Answer: 69.15%, 3458.