Answer on Question #80498 – Math – Statistics and Probability

Question

The mean monthly salary of the employees of a local library is R 4800. Assuming that the salaries are approximately normally distributed with a standard deviation of R 500, approximately what percentage of these workers earn monthly salaries in excess of R 6000?

Solution

Salary has distribution $X \sim N(4800, 500^2)$

Denote $F(x) = \int_x^{+\infty} \frac{1}{\sqrt{2\pi}} e^{-x^2/2} dx$. The values of F can be found in tables.

Then $P(X > 6000) = P\left(\frac{X-4800}{500} > \frac{6000-4800}{500}\right) = P(z > 2.4) = F(2.4) = 0.0082$

The percentage is 0.82%.

Answer: 0.82%.