

## Answer on Question #70943 – Math – Statistics and Probability

### Question

The summer monsoon rains in a country follow approximately a Normal distribution with mean 854 millimeters (mm) of rainfall and standard deviation 87 mm.

(b) "Normal rainfall" means within 20% of the long-term average, or between 683 mm and 1025 mm. In what percent of all years is the rainfall normal?

### Solution

$$\begin{aligned} P(683 < X < 1025) &= P\left(\frac{683-854}{87} < Z < \frac{1025-854}{87}\right) = \\ &= P(-1.97 < Z < 1.97) = P(Z < 1.97) - P(Z < -1.97) = 0.9512, \text{ that is,} \\ &95.12\%. \end{aligned}$$

**Answer:** 95.12%.