# Answer on Question #76757 – Math – Statistics and Probability

## Question

in the normal distribution 31% of the items are under 45 and 8% of items are over 64.find the mean and standard deviation of the distribution.

## Solution

$P(Z < z) = 0.31 \rightarrow \quad z = -0.50.$

$P(Z > z) = 0.08 \rightarrow \quad P(Z < z) = 0.92 \rightarrow \quad z = 1.41.$

So, $\begin{cases} \frac{45-\mu}{\sigma} = -0.50 \\ \frac{61-\mu}{\sigma} = 1.41 \end{cases} \rightarrow \begin{cases} \mu - 0.50\sigma = 45 \\ \mu + 1.41\sigma = 61 \end{cases} \rightarrow \quad \mu = 49.19, \quad \sigma = 8.38.$