## **Answer on Question #70350 – Math – Statistics and Probability**

## Question

Consider the sampling distribution of x for random samples of 65 customer satisfactions ratings. Determine the probability of observing a sample mean greater than or equal to 42.95 when we assume that mean equals 42.

## Solution

Assume that 
$$\sigma$$
, standard deviation equals 2.64.  
 $\mu = 42, \sigma = 2.64, n = 65, \overline{x} = 42.95$   
 $\mu_{\overline{x}} = 42, \sigma_{\overline{x}} = \frac{\sigma}{\sqrt{n}} = \frac{2.64}{\sqrt{65}}$   
 $P(\overline{x} \ge 42.95) = P\left(z \ge \frac{\overline{x} - \mu}{\frac{\sigma}{\sqrt{n}}}\right) = P\left(z \ge \frac{42.95 - 42}{\frac{2.64}{\sqrt{65}}}\right) = P(z \ge 2.9012) =$ 

= 0.0019

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