

## Answer to Question #89654 – Math – Statistics and Probability

### Question

A bank has an average random arrival rate of 3.2 customers' every 4 minutes. What is the probability of getting exactly 10 customers during an 8 minute interval?

### Solution

$\lambda = 3.2$  customers / 4 minutes

Required,  $X = 10$  customers / 8 minutes

So,  $\lambda$  becomes 6.4 customers / 8 minutes.

$X \sim Pois(\lambda)$

$$P(X) = \frac{\lambda^x e^{-\lambda}}{x!}$$

We get,

$$P(X = 10) = \frac{(6.4)^{10} e^{-6.4}}{10!}$$

$$P(X = 10) = 0.0528$$

**Answer:** 0.0528.