

Math 115 - Quiz 10

November 20, 2014

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (2 points) On average, an electronics store gets ten returns per day. What is the probability of the store getting **fewer than 8** returns on any given day?

Poisson
 $\mu = 10$

$$\begin{aligned} P(x < 8) &= P(x \leq 7) = \text{poissoncdf}(10, 7) \\ &= 0.2202 \\ &\approx 22\% \end{aligned}$$

2. (3 points) Jack's website gets viewed an average of 37.6 times per day.

- (a) What is the probability that Jack's website gets viewed **more than 45** times on a given day?

Poisson
 $\mu = 37.6$

$$\begin{aligned} P(x > 45) &= 1 - P(x \leq 45) \\ &= 1 - \text{poisson}(37.6, 45) \\ &= 0.1015 \\ &= 10.15\% \end{aligned}$$

- (b) What would be an unusually large number of views in a given day?

$$\begin{aligned} \mu &= 37.6 \\ \sigma &= \sqrt{37.6} \end{aligned}$$

$$\begin{aligned} \mu + 2\sigma &= 37.6 + 2\sqrt{37.6} \\ &\approx 49.86 \end{aligned}$$

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50 or more
would be unusually
large