Poisson Q3 [Practice/E](12/6/21)

If $X \sim Po(\lambda)$, what is the most common value of X?

(a) If $\lambda = 5$ (b) If $\lambda = 5.5$

Solution

$$P(X = r) = e^{-\lambda} \frac{\lambda^r}{r!} = P(X = r - 1) \times \frac{\lambda}{r}$$

(a) Mode (most common value) occurs at $X = 4 \; and \; X = 5$

(b) Mode occurs at $X = 5$