Q1 i.i.d Definition
1 Point
Are $X_1, X_2, \ldots, X_n$ independent and identically distributed (i.i.d) with the following distributions?

- $X_i \sim \text{Poi}(\lambda)$
- $X_i \sim \text{Ber}(p_i)$
- Let $X_i$ be an indicator variable which takes a $1$ if it is raining on the $i$th day of the year
- Imagine you toss a normal $6$-sided die $n$ times. Let $X_i$ be the outcome of the $i$th die toss.

Q2 Sum of IID Poisson RVs
2 Points
Let $X_1, X_2, \ldots, X_{10}$ be iid RV with $X_i \sim \text{Poi}(10)$.

Q2.1
1 Point
What is the distribution of their sum, $\sum_{i=0}^{n} X_i$?

- $N(100,100)$
- $\text{Poi}(100)$
- $\text{Poi}(10)$
- not enough info

Q2.2
1 Point
What is $P(\sum_{i=0}^{\infty} X_i \leq 110)$, approximately or exactly?

- $\Phi(\frac{110 - 10}{10}) + \Phi(1.05) = 0.8531$
- $\Phi(\frac{110 - 100}{10}) - \Phi(1) = 0.841$
- $\sum_{i=0}^{110} 10i e^{-10i} = 0.8529$

Q3 Friday Check-in
0 Points
How is week 6? Favorite Joke? Any other feedback for us?

You can also fill out the anonymous mid-quarter feedback form https://forms.gle/OnWbEd5G95DmSmuFU9, open through the end of this week.