

## Statistics Assignment 2

1. A reasonable choice of distribution is Poisson( $\lambda t$ ), where  $\lambda = 20 \cdot 5 = 100$  (the average number of raindrops per minute hitting the region measuring 5 inches<sup>2</sup>). Assuming this distribution,

$$P\left(\text{no raindrops in } \frac{1}{20} \text{ of a minute}\right) = e^{-100/20} * \left(\frac{(100/20)^0}{0!}\right) = e^{-5}.$$

2. X and Y have the same distribution since Y is also equally likely to represent any day of the week.

$$P(X < Y) = P(X \neq 7) = 6/7.$$