Statistics Assignment - 2

Q.) Answer

→

The given question is about how many times a particular event takes place so we will be using poisson's distribution for the same.

$$P[X = x] = \frac{e^{-m} m^x}{x!}$$

Let the time is 't'

So the avg raindrops = $t \times 20 \times 5$ [5 in inches]

$= 100t$

$= 100t/20$

$= 5$ times.

∴ we are finding out probability for No raindrop so, $[x=0]$

$$P[x=0] = \frac{e^{-5} \times 5^0}{0}$$

$= e^{-5}$ [probability]

Q2) Answer

→ As X is the random day of the week, so X has the probability of $\frac{1}{7}$ (occurring)

let,

X	Y	P(x)	P(y)
1	2	$\frac{1}{7}$	$\frac{1}{7}$

again if,

x	y	P(x)	P(y)
2	3	1/7	1/7
3	4	1/7	1/7
4	5	1/7	1/7
5	6	1/7	1/7
6	7	1/7	1/7
7	1	1/7	1/7

all the values of X & Y have equal probabilities.

$$P(x/y) = 1/7 \times 6$$

$$= \frac{6}{7}$$

$$\boxed{P(x/y) = 0.85}$$