Ex-4 A person has some cars, and the average demand of cars per day is 3, find probability that on any day not more than 2 cars are in use.($e^{-3} = 0.0498$)

Here $m = 3$,

Not more than 2 cars are in use. i.e. $x = 0,1,2$

$$\therefore \quad p(x) = \frac{e^{-m}.\, m^x}{x!} \qquad p(0) = \frac{e^{-3}.\,(3)^0}{0!} = 0.0498$$

$$x = 1 \qquad p(1) = \frac{e^{-3}.\, m^1}{1!} = e^{-3} \times 3 = 0.0498 \times 3 = 0.1494$$

$$x = 2 \qquad p(2) = \frac{e^{-3}.\,(3)^2}{2\,!} = 0.0498 \times \frac{9}{2} = 0.02241$$

$$\therefore \quad p(0) + p(1) + p(2) = 0.0498 + 0.1494 + 0.02241 = 0.4233$$