### 0.0.1 Poisson Distribution Question

A motor dealership which specializes in agricultural machinery sells on vehicle every 2 days, on average

In this question the unit period is one day. The company expects to sell, on average, 0.5 vehicles every day. The Poisson mean $m$ is therefore 0.5.

$$P(X \geq 1)$$

- Go to your Poisson tables, and search for the $m = 0.5$ column.
- We are interested in the probability of **exactly** one vehicle sold on a particular day.
- From the tables we can easily work out $P(X \geq 1)$, but this is probability of one or more vehicles being sold.
- This is not the same thing.
- $P(X \geq 1) = P(X = 1) + P(X = 2) + P(X = 3) + \ldots$
- $P(X \geq 1) = P(X = 1) + P(X \geq 2)$

From tables

- $P(X \geq 1)$
- $P(X \geq 2)$

Six day working week? our unit period is now six days. How many vehicles do we expect to sell in 6 days? answer = 3

$m = 3$

$P(X \geq 4)$