$$P(X=0) + P(X=1) + P(X=2) + P(X=3)$$

$$= \frac{1}{8} + \frac{3}{8} + \frac{3}{8} + \frac{1}{8}$$

$$= \frac{8}{8}$$

$$= 1$$

$$\boxed{\sum p_i = 1}$$

| X | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| P(X=x) | $\frac{1}{8}$ | $2k$ | $3k$ | $k/2$ |

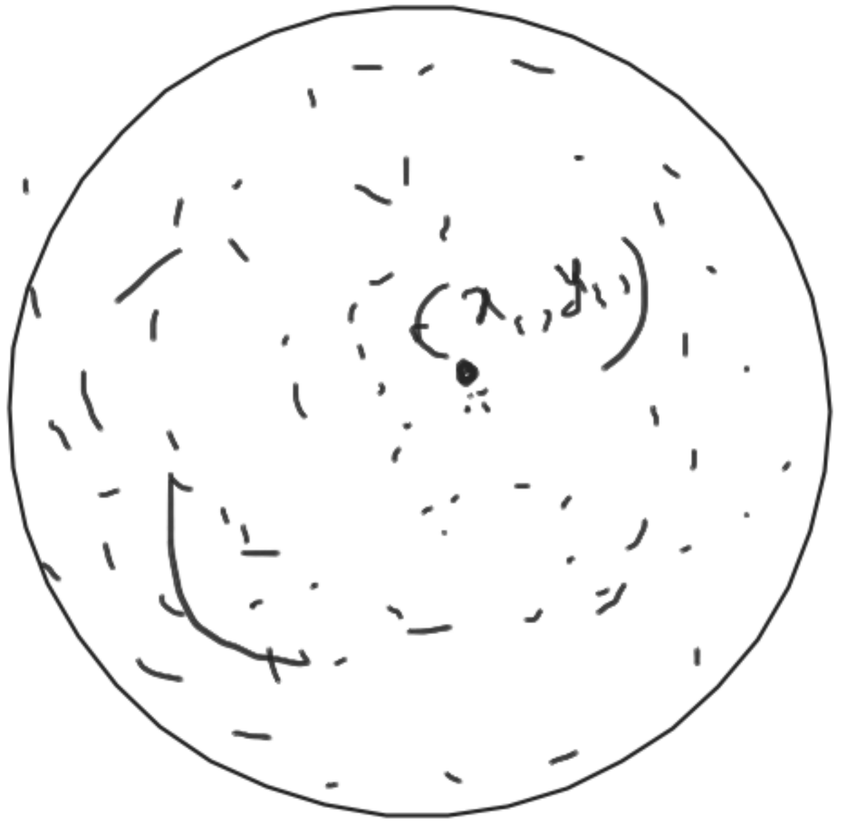
pmf. $\sum p_i = 1$.

$k = \frac{7}{44}$.

$$\frac{1}{8} + 2k + 3k + \frac{k}{2} = 1$$

$$\frac{11k}{2} + \frac{1}{8} = 1 \Rightarrow \frac{11}{2}k = \frac{7}{8}$$

Experiment : hitting a dashboard.




$X : \Omega \longrightarrow \mathbb{R}$.

is continuous

Random variable