

# Assignment 1

## AI1110: Probability and Random Variables

### Indian Institute of Technology Hyderabad

Aditya Garg  
CS22BTECH11002

**10.15.1.4:** Which of the following cannot be the probability of an event ? (D) 0.7

(A)  $\frac{2}{3}$  (B)  $-1.5$  (C) 15% (D) 0.7

Since  $0 \leq 0.7 \leq 1$ , From (1)

It can be a probability of an event.

**Answer:**

Probability of an event  $E$ , written as  $P(E)$ :

$$P(E) = \frac{\text{Number of outcomes favourable to } E}{\text{Total Number of possible outcomes in sample space}}$$

From the definition of probability  $P(E)$ , number of favourable outcomes is always less than or equal to the number of all possible outcomes.

$$0 \leq P(E) \leq 1 \quad (1)$$

(A)  $\frac{2}{3}$

Since  $0 \leq \frac{2}{3} \leq 1$ , From (1)

It can be probability of an event.

(B)  $-1.5$

Since  $-1.5 \leq 0$ , From (1)

It cannot be a probability of any event.

(C) 15%

$$15\% = \frac{15}{100}$$

Since  $0 \leq \frac{15}{100} \leq 1$ , From (1)

It can be probability of an event.