

Discrete | Continuous Random variable.

Q1 Define random variable with probability distribution?

→ Random variable: A random variable provides a means for describing experimental outcomes using numeric values.

- A random variable is a numerical description of the outcome of an experiment.

- A random variable can be a 'discrete random variable' or a 'continuous random variable'.

Q2 Give example of Discrete random variable & Continuous random variable.

→ Discrete random variable:

(i) Number of customer who place an order
ie. 0, 1, 2, 3, 4, 5.

(ii) number of defective radios out of 50 radios.

ie. 0, 1, 2, 3, ..., 49, 50.

(iii) Number of customer in a restaurant
ie. 0, 1, 2, 3, ...

- (iv) Gender of the customer
 ie. 0 if male.
 1 if female.

Continuous random variable:

- (i) Time of customer arrivals in a bank in minutes

ie. $x \geq 0$

- (ii) height of students in a class in inches.

ie. $x \geq 0$

- (iii) Percentage of project complete after six months.

ie. $0 \leq x \leq 100$

- (iv) Weight a shipment of goods in pounds

ie. $0 \geq 0$

Q3 Discrete or continuous & Range

→ Tossing a coin with outcome as no. of heads.

→ Discrete random variable

Range: 0, 1

0 - not head

1 - head.

② Time between 2 consecutive flight arrive.

→ Continuous random variable.
Range $x \geq 0$.

③ Tossing 2 coins with outcomes as no of tails.

→ Discrete random variable.

Range : 0, 1, 2

0 - HH

1 - HT, TH

2 - TT

④ Distance between.

→ Continuous random variable
Range : $x \geq 0$

⑤ Outcomes of football match

→ Discrete random variable

Range : 0, 1 0 for lose 1 for win

⑥ No. of person selected in interview

→ Discrete random variable.

Range : 0, 1, 2, ...

⑦ Weight of shipment

→ Continuous random variable

Range $x \geq 0$