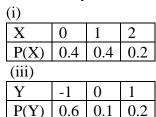


(iv)



(ii)						
` /	X	0	1	2	3	4
	P(X)	0.1	0.5	0.2	-0.1	0.3

Z	3	2	1	0	-1
P(Z)	0.3	0.2	0.4	0.1	0.05

- 2. Find the probability distribution of
  - (i) number of heads in two tosses of a coin
  - (ii) number of tails in the simultaneous tosses of three coins
  - (iii)number of heads in four tosses of a coin
- **3.** A coin is biased so that the head is 3 times as likely to occur as tail. If the coin is tossed twice, find the probability distribution of number of tails.
- **4.** A random variable X has the following probability distribution.

X	0	1	2	3 4	5	6	7
P(X)	0	k	2k	2k 3k	k <sup>2</sup>	$2k^2$	$7k^2 + k$

- Determine i) k
- ii) P(X<3)
- iii) P(X>6)
- iv) P(0 < x < 3)
- **5.** The random variable X has probability distribution P(X) of the following form, where k is some number:

$$P(X) = \begin{cases} k, if \ x = 0 \\ 2k, if \ x = 1 \\ 3k, if \ x = 2 \\ 0, otherwise \end{cases}$$

- (a) Determine the value of k.
- (b) Find P(X < 2),  $P(X \ge 2)$ ,  $P(X \ge 2)$ .
- **6.** Let X be a discrete random variable with a probability function

Values of $X:x$	1	4	9
f(x)	0.1	0.4	0.5

Find the mean of  $X, X^2, \sqrt{\overline{X}}$  and  $2\sqrt{X}$ .