Q1) Three coins are tossed, the probability that two heads and one tail are obtained.

Ans) Three Coins –

HHH
HHT → (2 Heads One Tail)
HTH
THH
TTT
TTH
THT
HTT

Total 8 possibilities.

So, $\left(\dfrac{1}{8}\right)$ // Ans //.

Q2) Two Dice are rolled, find the prob. that sum is →

(i) Equal to 1

(ii) Less than or equal to 4

(iii) sum is divisible by 2 and 3

(i) Equal to One → There is 0 prob.

Because → $\dfrac{0}{36} = 0.11$

(ii) Less than or equal to 4 →

(1,3), (3,1), (2,2), ~~✗✗✗✗✗✗~~, (1,2), (2,1),

(1,0), (1,1) → ~~✗✗✗✗✗~~ ~~✗✗✗✗✗~~ $\left(\dfrac{7}{36}\right)$,, Ans,,

(iii) Sum in divisible by 2 and 3 →

$[(1,5), (5,1) (6,6),$ ~~(2,6)~~ $, (4,2), (2,4),$

$(3,3),]_6$ → $\dfrac{6}{36}$ → $\left(\dfrac{1}{6}\right)$,, Ans

Q3.) A bag contains 2 red, 3 green and 2 blue balls, Two balls are drawn at random. what is the prob. that none is blue.

Ans) Total Balls → 7 balls   → $^7C_2 + \dfrac{7 \times 6^3}{1 \times 2}$ = (21 $\times$)

~~$^7C_2 + {}^7C_1 + {}^7C_0 \Rightarrow$~~

$\times$ $7C_2 + 21$ [Total outcomes]

Prob. None is Blue → $5C_2$ → $\dfrac{5 \times 4^2}{1 \times 2}$ = 10

→ $\left(\dfrac{10}{21}\right)$,, Ans

Q4) Calc. the expected number of candies for a randomly selected child →

Ans) Expected no. of candies for a random child

→ $1 * 0.015 + 4 * 0.20 + 3 * 0.65$

$+ 0.005 * 5 + 6 * 0.01 + 2 * 0.12$

→ 3.090

→ $\boxed{3.09}$ // **Ans**//

Q6) Calculate Expected value →

Ans) Mean $= \dfrac{108 + 110 + 123 + 134 + 135 + 145 + 167 + 187 + 199}{9}$

→ $\boxed{145.3}$ // **Ans**//

A T & T,

Q2 One in 200 long-distance telephone in in misredirected.

Ans) one in 200 long distance in misdirected,

→ $\underline{(P) \text{ of call misdirecting}} \rightarrow \left(\dfrac{1}{200}\right)$

Prob. of call not misredirecting $\rightarrow \left(\dfrac{199}{200}\right)$

No. of calls $= 5$

$$P(x) = {}^{n}C_{x} \, p^{x} \, q^{n-x}$$

$$= 1 - P(0)$$

$$= 1 - {}^{5}C_{0} \left(\dfrac{1}{200}\right)^{0} \left(\dfrac{199}{200}\right)^{5-0}$$

$$= 1 - \left(\dfrac{199}{200}\right)^{5}$$

$$= \boxed{0.02475} \quad \text{Ans}$$

(Q2)

X	P(x)
-2000	0.1
-1000	0.1
0	0.2
1000	0.2
2000	0.3
3000	0.1

Returns on business venture to the nearest 1000$;

Ans) (i) what is the most likely monetary out come of the business venture →

→ $(2000\$)$

(ii) Is the venture to be successful → 0.6 → (60%) chances.

(iii) what is long-term avg. earning of business ventures of this kind,

→ $\sum E(x) P(x) = 800\$$ // Ans//

(iv) Venture is likely to be more successful on Expected value is +ve → 800$ // Ans//