

①

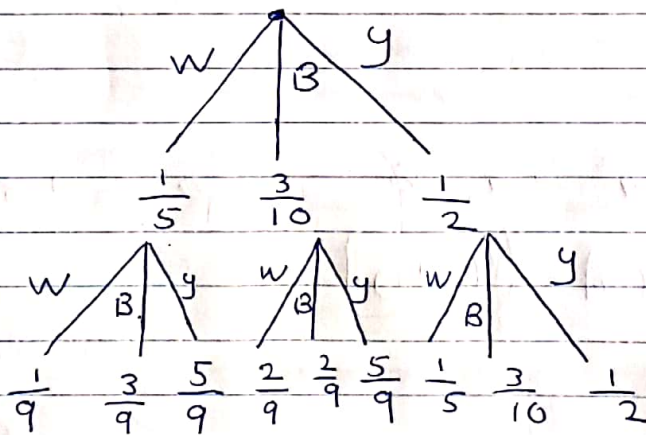
①	X	$P(X)$	$E(X) = 5.35$
	2	0.4	$E(X^2) = 36.25$
	7	0.25	$Var(X) = 36.25 - 5.35^2 = 7.63$
	8	0.35	$\sigma(X) = 2.76$
			$n = 60$

$$S \sim N(321, 21.38)$$

$$1c) P(S > 350) = P(Z > 1.36) = 1 - 0.9131 = \boxed{0.0869}$$

$$2) P(300 < S < 380) = P(-0.98 < Z < 2.76) = \varphi(2.76) - (1 - \varphi(0.98)) = \boxed{0.8336}$$

② $W = 1/5, B = 3/10, Y = 1/2$



$$1c) P(WW) + P(BB) + P(Y Y)$$

$$= \frac{1}{5} \cdot \frac{1}{9} + \frac{3}{10} \cdot \frac{2}{9} + \frac{1}{2} \cdot \frac{1}{2} = \boxed{0.339}$$

$$2) P(WW) + P(WB) + P(WY) + P(BW) + P(BY)$$

$$= \frac{1}{5} \cdot \frac{1}{9} + \frac{1}{5} \cdot \frac{3}{9} + \frac{1}{5} \cdot \frac{5}{9} + \frac{3}{10} \cdot \frac{2}{9} + \frac{1}{2} \cdot \frac{1}{5} = \boxed{0.367}$$

(2)

2 ε)

7178 piece = A
7178 ve = B

$$\begin{aligned}
 P(A/B) &= \frac{P(A \cap B)}{P(B)} = \frac{P(y B)}{P(B)} \\
 &= \frac{\frac{1}{2} \cdot \frac{3}{10}}{\frac{1}{5} \cdot \frac{3}{9} + \frac{3}{10} \cdot \frac{2}{9} + \frac{1}{2} \cdot \frac{3}{10}} = \frac{\frac{3}{20}}{\frac{3}{45} + \frac{6}{90} + \frac{3}{20}} \\
 &= \frac{27}{12 + 12 + 27} = \frac{27}{51} = \boxed{0.529}
 \end{aligned}$$

$$(3) \quad (c) \quad 36 \pm (1.96) \frac{12}{\sqrt{50}} = \boxed{36 \pm 3.326}$$

$$2) \quad n = \frac{(1.96)^2 \cdot 12^2}{2^2} = \boxed{139}$$

$$4) (c) \quad A \int_{10}^{\infty} \frac{1}{x^2} dx = 1, \quad A \left(-\frac{1}{x} \right) \Big|_{10}^{\infty} = 1$$

$$A \left(\frac{1}{10} \right) = 1 \rightarrow \boxed{A = 10}$$

$$2) \quad 10 \int_{10}^x \frac{1}{t^2} dt = 10 \left(-\frac{1}{t} \right) \Big|_{10}^x$$

$$= \boxed{1 - \frac{10}{x}, \quad 10 < x < \infty}$$

$$\varepsilon) \quad P(X > 12) = 1 - F(12) = 1 - \left(1 - \frac{10}{12} \right) = \boxed{\frac{5}{6}}$$

(3)

5) A = 8027 7 101077
 B = 8027 7 107

$$P(\bar{A} \cap B) + P(A \cap \bar{B}) = 0.35$$

$$P(\bar{A} \cap \bar{B}) = 0.11$$

$$P(B) = 0.66$$

	A	$\bar{A}$	
B	0.54	0.12	0.66
$\bar{B}$	0.23	0.11	0.34
	0.77	0.23	

1) $P(A) = 0.77$ 2) $P(\bar{A} \cap B) = 0.12$

3) $\frac{P(A \cap \bar{B})}{0.35} = \frac{0.23}{0.35} = 0.657$

6) $P(\text{EIS}) = \left(\frac{1}{2}\right)^2 + \left(\frac{1}{2}\right)^4 + \left(\frac{1}{2}\right)^6 + \dots$

$$= \frac{1}{4} \left(\frac{1}{1 - \frac{1}{4}} \right) = \frac{1}{4} \cdot \frac{4}{3} = \frac{1}{3}$$

$$P(\text{EIS} = 10) = \frac{2}{3}$$

$$10 \sim N(80, 117) = X$$

7)

X	P(X)
3	$\frac{1}{3}$
-2	$\frac{2}{3}$

$$E(X) = -\frac{1}{3}$$

2) $E(X^2) = \frac{17}{3}$, $\text{Var}(X) = \frac{17}{3} - \frac{1}{9} = 5.56$

$$n = 30$$

$$\mu = -\frac{1}{3}$$

$$\sigma = 2.36$$

$$S \sim N(-10, 12.93), P(S > 0) = P(Z > 0.77) = 1 - \Phi(0.77) = 0.2206$$