

Qn 3

$$Z = \frac{X - \mu}{\sigma}$$

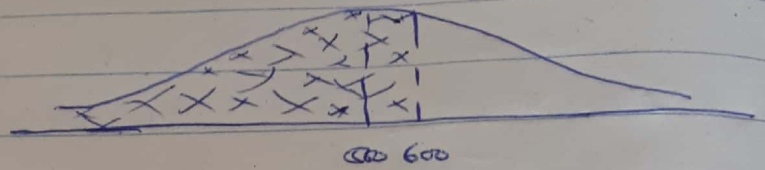
$$X = 600$$

$$\mu = 500$$

$$\sigma = 50 = \frac{600 - 500}{50}$$

$$= 2$$

$$\text{Area} = 0.9772$$



Qn 5

$$EMV = \sum X_i P(X_i)$$

$$\text{Machine 1 Alternative 1} = (0.3 \times 50) + (0.5 \times 40) + (0.2 \times 45) = 44$$

$$\text{Machine Alternative 2} = (0.3 \times 45) + (0.5 \times 42) + (0.2 \times 47) = 43.9$$

$$\text{Machine 3} = (0.3 \times 40) + (0.5 \times 35) + (0.2 \times 54) = 40.2$$

$$\text{Machine 4} = (0.3 \times 60) + (0.5 \times 25) + (0.2 \times 48) = 40.1$$

$$\text{Machine 5} = (0.3 \times 45) + (0.5 \times 40) + (0.2 \times 45) = 42.5$$

Qn 6

$$EMV = \sum X_i P(x_i)$$

$$\begin{aligned}\text{Alternative 1} &= (0.3 \times 120) + (0.5 \times 140) + (0.2 \times 120) \\ &= 130\end{aligned}$$

Qn 7

$$\frac{4}{10}$$

$$= 0.4$$

Qn 8

$$P(H/W) = \frac{P(WH)}{P(W)} = \frac{0.2}{0.6} = 0.33$$

Qn 9.

$$\begin{aligned}\text{B.E.P} &= \frac{\text{Fixed Cost}}{(\text{Selling price} - \text{Variable cost}) \text{ per unit}} \\ &= \frac{11,000}{200 - 50} \\ &= \underline{\underline{55}}\end{aligned}$$

Qn 17

$$\sum E(x) = \sum xP(x)$$

	Event 1	Event 2	EMV
probability	0.6	0.4	~~1~~
Robot 1	50,000	-40,000	14,000
Robot 2	30,000	-20,000	10,000
Robot 3	0	0	0