

## Homework

Q.1) Determine mean, Variance & Standard deviation of following

# People	# hours
2	9
4	21
4	30
8	39
4	42
2	7

→ (i) Mean ( $\mu$ ) =

~~2 x 9~~

$$\left(9 \times \frac{2}{24}\right) + \left(21 \times \frac{4}{24}\right) + \left(30 \times \frac{4}{24}\right) +$$

$$\left(39 \times \frac{8}{24}\right) + \left(42 \times \frac{4}{24}\right) + \left(7 \times \frac{2}{24}\right)$$

$$\boxed{\mu = 29.83 \text{ hrs}}$$

(ii) Variance ( $\sigma^2$ ) =

$$E\{(x-\mu)^2\} = E(x^2) - \mu^2$$

Date:

Mo Tu We Th Fr Sa Su

$$E(x^2) = \frac{[(2 \times 9^2) + (4 \times 21^2) + (4 \times 30^2) + (8 \times 39^2) + (4 \times 42^2) + (2 \times 7^2)]}{24}$$

$$= 1032.04$$

$$\text{Variance } (\sigma)^2 = 1032.04 - (29.83)^2$$

$$\boxed{\sigma^2 = 142.2} \text{ hr}^2$$

③ standard deviation ( $\sigma$ )

$$= \sqrt{142.2}$$

$$\boxed{\sigma = 11.92} \text{ hr}$$