

1. Find the variance of the following data

6, 8, 10, 12, 14, 16, 18, 20, 22, 24 .

A)

Given Data

6, 8, 10, 12, 14, 16, 18, 20, 22, 24

$x_1$	$\bar{x}$	$x_i - \bar{x}$	$(x_i - \bar{x})^2$
6	15	-9	81
8	15	-7	49
10	15	-5	25
12	15	-3	9
14	15	-1	1
16	15	1	1
18	15	3	9
20	15	5	25
22	15	7	49
24	15	9	81

We know

$$\text{Mean} = \frac{\sum x}{n}$$

where n is no" of observations

$$\sum (x_i - \bar{x})^2$$

$$= 330$$

∴ mean

$$(\bar{x}) = \frac{\sum x}{n} = \frac{6+8+10+12+14+16+18+20+22+24}{10}$$

$$= \frac{150}{10}$$

$$\bar{x} = 15$$

$$\therefore \text{variance} = \frac{\sum (x_i - \bar{x})^2}{n - 1}$$

$$= \frac{330}{10 - 1}$$

$$= \frac{330}{9}$$

$$\text{variance} = 36.67$$