* Step deviation method.

$$\bar{X} \text{ (mean)} = a + \frac{\Sigma f d_s}{\Sigma f} \times i$$

Where, a = assumed mean.

$$d_s = \frac{x - a}{i} = \frac{d_x}{i}$$

Ex. Profit per shop: 0–10, 10–20, 20–30, 30–40, 40–50, 50–60

No. of shops: 12, 18, 27, 20, 17, 6

Solution –

C.I	x	f	d_x (x − 25)	d_s (i = 10)	fd_s
0–10	5	12	−20	−2	−24
10–20	15	18	−10	−1	−18
20–30	25	27	0	0	0
30–40	35	20	10	1	20
40–50	45	17	20	2	34
50–60	55	6	30	3	18
		$\Sigma f = 100$			$\Sigma fd_s = 30$

$$\bar{x} = a + \frac{\Sigma f d_s}{\Sigma f} \times i$$

$$= 25 + \frac{30}{100} \times 10$$

$$= 25 + 3$$

$$= 28 \text{ Ans.}$$