Q Calculation of Mean from grouped data.

C.I	f
40-44	1
35-39	2
30-34	4
25-29	7
20-24	5
15-19	3
10-14	2

Step 1 :→ Calculate the mid.pt from each class interval, e.g

$$X = \frac{40+44}{2} = 42$$

Step 2 :→ Calculate the product of mid.pt and frequency. fX

Step 3 :→ Put values in the formula $\bar{X} = \frac{\Sigma fx}{N}$

C.I	Midpt(x)	Frequency(f)	Product of (f)×(x) f(x)
40-44	42	1	42
35-39	37	2	74
30-34	32	4	128
25-29	27	7	189
20-24	22	5	110
15-19	17	3	51
10-14	12	2	24
		N = 24	$\Sigma fx = 618$

$$\text{Mean } \bar{X} = \frac{\Sigma fx}{N} = \frac{618}{24} = 25.75.$$

Q Calculating Mean With Short Method or Assumed Mean Method.

C.I	f
40-44	1
35-39	2
30-34	4
25-29	7
20-24	5
15-19	3
10-14	2

Step 1: Calculate the mid.pt (X).

Step 2: Calculate / locate the Assumed Mean (A.M), which will be the mid.pt at the interval (C.I) with the largest frequency (f).

In this example it is 27 with the largest frequency 7.

Step 3: Calculate the "Deviation" which is (X − A.M) or x', then divide it by class interval, in this example it is 5. $\left[x' = \frac{X - A.M}{\text{Size of the class}}\right]$

eg $\frac{42-27}{5} = 15/5 = 3$.

Step 4: Multiply frequency with x' (fx').

Step 5: Put everything in the formula.

$$\overline{X} = A.M + \frac{\sum f x'}{N}$$

C.I	Mid.pt(X)	(f)	Deviation(X-A.M) x'	fx'
40-44	42	1	+3	3
35-39	37	2	+2	4
30-34	32	4	+1	4
25-29	27	7	0	0
20-24	22	5	-1	-5
15-19	17	3	-2	-6
10-14	12	2	-3	-6
		N = 24		$\Sigma fx' = -6$

+11

-17

$$\bar{X} = A.M + \frac{\Sigma f x'}{N} \times i$$

$$= 27 + \frac{-6}{24} \times 5$$

$$= 27 + \frac{-30}{24}$$

$$\bar{X} = 27 - 1.25 = 25.75.$$