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Practice Qn

range	f	find mean
1-10	2	
11-20	7	
21-30	10	
31-40	3	
41-50	1	

mean

correct range	f	m	$\bar{X} = \frac{\Sigma mf}{N}$ mf
0.5 - 10.5	2	5.5	= 11
10.5 - 20.5	7	15.5	108.5
20.5 - 30.5	10	25.5	255
30.5 - 40.5	3	35.5	106.5
40.5 - 50.5	1	45.5	45.5
	23		526.5

$\frac{23+1}{2} = \frac{24}{2} = 12$ $\quad = \frac{526.5}{23} = 22.89$

1 b)

Range	freq	-m	mf
0-10	2	5	10
10-20	7	15	105
20-30	15	25	375
30-40	10	35	350
40-50	11	45	495
50-60	5	55	275
			1610 → Σ(mf)

Given N = 50

for mean

$$\bar{X} = \frac{\Sigma (mf)}{N}$$

$$= \frac{1610}{50} = 32.2$$

c) Exam Score

51-60
61-70
71-80
81-90
91-100

diff. 61-60 ... 1

diff/2 = 1 - 0.5

New Score Range	f	m	mf
50.5 - 60.5	4	55.5	222
60.5 - 70.5	8	65.5	524
70.5 - 80.5	15	75.5	1132.5
80.5 - 90.5	8	85.5	684
90.5 - 100.5	5	95.5	477.5
	N = 40		3040

$\Sigma(mf)$

$$\text{Mean } (\bar{x}) = \frac{\Sigma(mf)}{N} = \frac{3040}{40}$$

$$= 76$$

2)

Given	Mean Wages	No of workers
Group 1	75	1000
Group 2	60	1500

let sum of wages in group be W_1 and that of group 2 be W_2

$$\text{Mean (Group-1)} = \frac{\Sigma W}{N}$$

$$\Sigma W_1 = 75 \times 1000$$

$$\Sigma W_2 = 60 \times 1500$$

Mean of entire group $(\bar{x})$

$$\frac{\Sigma W}{N} = \frac{(75 \times 1000) + 60 \times 1500}{2000 + 1500}$$

$$= 66$$

3) Given

Exam	No Examined	Mean weight
A	50	113
B	60	120
C	90	115

Mean of A ($\bar{x}A$) : $\frac{\Sigma WA}{NA}$ =

$\Sigma WA = 113 \times 50$

$\Sigma WB = 120 \times 60$

$\Sigma Wc = 115 \times 90$

Mean of entire group ($\bar{x}$) :

$$\frac{(113 \times 50) + (120 \times 60) + (115 \times 90)}{50 + 60 + 90}$$

$$= \frac{23200}{200} = 116$$