(1)(a) find the mean of the following:

a.

range	frequency
1-10	2
11-20	7
21-30	10
31-40	3
41-50	1

X	f	m	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
	N = 23		526.5

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

$$= \frac{526.5}{23} = 22.89$$

(1b)

range	frequency
1-10	2
10-20	7
20-30	15
30-40	10
40-50	11
50-60	5

X	f	M	Mf
1-10	2	5.5	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
	N = 50		1,610

$$\text{Mean}(\bar{x}) = \frac{\Sigma Mf}{N} = \frac{1,610}{50} = 32.2$$

1c) Exam Score — No. of students

51-60	4
61-70	8
71-80	15
81-90	8
91-100	5

X	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	1,132.5
80.5-90.5	8	85.5	684
90.5-100.5	5	95.5	477.5
	N = 40		3,040

$$\text{Mean } \bar{x} = \frac{\Sigma Mf}{N} = \frac{3,040}{40} = 76$$

2. Find the means for the entire group of workers for the following data:

	Group-1	Group-2
Mean wages	75	60
No. of workers	1000	1500

$$\text{Combined Mean} = \frac{\bar{X}_1 N_1 + \bar{X}_2 N_2}{N_1 + N_2}$$

Mean for entire group.

$$= \frac{75(1000) + 60(1500)}{1000 + 1500}$$

$$= \frac{75000 + 90000}{1000 + 1500}$$

$$= \frac{165000}{2500} = \frac{1650}{25} \quad \begin{matrix} 66 \\ 330 \end{matrix}$$

$$\bar{X} = 66$$

3. Compute mean for entire group

Medical examination	No examined	Mean weight (pounds)
A	50	113
B	60	120
C	90	115

Mean for entire group.

$$\text{Combined Mean} = \frac{\bar{x}_1 N_1 + \bar{x}_2 N_2 + \bar{x}_3 N_3}{N_1 + N_2 + N_3}$$

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

$$= \frac{5,650 + 7,200 + 10,350}{200}$$

$$= \frac{23,200}{200} = \frac{232}{2} = 116$$