Solution

a. Frequency Distribution Table

Choosing class interval of size 10 from $80-89$ and ends at $200-209$, we compute the frequency distribution table as follows:

Frequency Distribution Table

Class Interval (x) (in Dollars)	frequency (f)	Mid-Class Interval	x-A	**MD**=f(x-A
80-89	1	84.5	-60	-60
90-99	3	94.5	-50	-150
100-109	3	104.5	-40	-120
111-119	4	114.5	-30	-120
120-129	4	124.5	-20	-80
130-139	5	134.5	-10	-50
140-149	7	144.5	0	0
150-159	6	154.5	10	60
160-169	5	164.5	20	100
170-179	4	174.5	30	120
180-189	3	184.5	40	120
190-199	2	194.5	50	100
200-209	3	204.5	60	180
	50			100

b. Arithmetic Mean (Using the method of assumed Mean)

From the the table, we choose an Assumed mean $\mathbf{A} = 144.5$ and obtained the deviation from assumed mean the fourth column i.e $x - \mathbf{A}$, the product of the mean deviation and the frequency f, is calculated in the last column which is $f(x - \mathbf{A})$.

we can now compute the Mean as follows

Assumed mean $\mathbf{A} = 144.5$

Mean deviation

$$\mathbf{MD} = \frac{\sum f(x - \mathbf{A})}{\sum f} = \frac{100}{50} = 2$$

Then the real Mean $\overline{x}$ can be computed as

$$\overline{x} = \mathbf{A} + \mathbf{MD} = 144.5 + 2 = 146.5$$

Therefore the mean is 146.5.