

1.

KINZA-Batch 60

Practice Exercise

Mean

Rough

$$\begin{array}{r} 74 \\ 23 \\ 23 \\ 27 \\ \hline 147 \\ 29 \\ 29 \\ \hline 35 \\ \hline 240 \end{array}$$

1. 16, 18, 19, 21, 23, 23, 27, 29, 29, 35

$$\begin{aligned} \text{Mean} &= \frac{\text{Sum of all numbers}}{\text{Total numbers}} \\ &= \frac{16 + 18 + 19 + 21 + 23 + 23 + 27 + 29 + 29 + 35}{10} \\ &= \frac{240}{10} = \boxed{24} \text{ Ans} \end{aligned}$$

$$\begin{array}{r} 22 \\ 102 \\ 147 \\ 59 \\ 49 \\ \hline 111 \\ \hline 105 \\ \hline 59.5 \end{array}$$

2. 2.2, 10.2, 14.7, 5.9, 4.9, 11.1, 10.5

$$\begin{aligned} \text{Mean} &= \frac{2.2 + 10.2 + 14.7 + 5.9 + 4.9 + 11.1 + 10.5}{7} \\ &= \frac{59.5}{7} = \boxed{8.5} \text{ Ans} \end{aligned}$$

$$\begin{array}{r} 2 \overline{) 42} \\ \underline{2} \\ 2 \\ \underline{2} \\ 1 \\ \hline 33 \\ 22 \\ \hline 5 \\ \hline 60 \end{array}$$

3. $1\frac{1}{4}, 2\frac{1}{2}, 5\frac{1}{2}, 3\frac{1}{4}, 2\frac{1}{2}$

$$\begin{aligned} &\Rightarrow \frac{5}{4} + \frac{5}{2} + \frac{11}{2} + \frac{13}{4} + \frac{5}{2} \\ &\frac{5}{4} + \frac{5 \times 2}{2 \times 2} + \frac{11 \times 2}{2 \times 2} + \frac{13}{4} + \frac{5 \times 2}{2 \times 2} \\ &\Rightarrow \frac{5 + 10 + 22 + 13 + 10}{4} \Rightarrow \frac{60}{4} \Rightarrow 15 \\ \text{Mean} &= \frac{15}{5} = \boxed{3} \text{ Ans} \end{aligned}$$

4. Mean of first ten whole numbers.

0, 1, 2, 3, 4, 5, 6, 7, 8, 9

$$\text{Mean} = \frac{0+1+2+3+4+5+6+7+8+9}{10}$$

$$= \frac{45}{10} \Rightarrow \boxed{4.5} \text{ Ans.}$$

$$\begin{array}{r} 5.2 \\ 5 \overline{)26} \\ \underline{25} \\ 10 \\ \underline{10} \\ 0 \\ \underline{0} \\ 0 \end{array}$$

5. Mean of first 5 prime numbers.

1, 2, 3, 5, 7, 11

$$\text{Mean} = \frac{1+2+3+5+7+11}{5} \Rightarrow \frac{26}{5} = \boxed{5.2} \text{ Ans}$$

$$\begin{array}{r} 66 \\ 396 \\ \hline 6 \end{array}$$

6. The mean of 8, 11, 6, 14, x and 13 is 66. Find the value of x

$$\text{Mean} = \frac{\text{Sum of all numbers}}{\text{Total numbers}}$$

$$66 = \frac{8+11+6+14+13+x}{6} = \frac{52+x}{6}$$

$$66 \times 6 = 52 + x \Rightarrow 396 = 52 + x$$

$$x \Rightarrow 396 - 52 \Rightarrow \boxed{344} \text{ Ans.}$$

$$\begin{array}{r} 66 \\ 396 \\ \hline 6 \\ 20 \\ 21 \\ + 11 \\ \hline 52 \\ 3 \\ 66 \\ \hline 396 \\ 396 \\ \hline 52 \\ \hline 344 \\ \hline 52 \end{array}$$

5. The mean of 6, 8, x+2, 10, 2x-1 & 2 is 9. Find x

$$\text{Mean} \Rightarrow \frac{\text{Sum of all n.o}}{\text{Total numbers}}$$

$$\Rightarrow 6 + 8 + (x+2) + 10 + (2x-1) + 2$$

$$\Rightarrow 6 + 8 + x + 2 + 10 + 2x - 1 + 2$$

$$\Rightarrow 27 + 3x \Rightarrow 3(9+x)$$

$$\Rightarrow \text{Mean} = \frac{3(9+x)}{62}$$

$$\Rightarrow 9 = \frac{9+x}{2} \Rightarrow 9 \times 2 = 9+x$$

$$\Rightarrow 18 = 9+x \quad x = 18-9 \quad \boxed{x=9} \text{ Ans}$$

6. Find Mean:- Age of 20 boys in a locality

Age in Years	12	10	15	14	8	$\Rightarrow x$
N.o of Boys	5	3	2	6	4	$\Rightarrow f$

$$fx \Rightarrow 12 \times 5, 10 \times 3, 15 \times 2, 14 \times 6, 8 \times 4$$

$$\Rightarrow 60, 30, 30, 84, 32$$

$$\text{Mean} = \frac{60 + 30 + 30 + 84 + 32}{20}$$

$$\Rightarrow \frac{236}{20} \Rightarrow \boxed{11.8} \text{ Ans}$$

Q#7 \rightarrow

$$\begin{array}{r} 12 \\ 3 \\ \hline 60 \\ 24 \\ \hline 84 \end{array}$$

$$\begin{array}{r} 2 \\ 14 \\ 5 \\ \hline 70 \end{array}$$

$$\begin{array}{r} 92 \\ 84 \\ \hline 360 \\ 236 \end{array}$$

$$\begin{array}{r} 20 \overline{) 236} \\ 11 \cdot 8 \end{array}$$

$$\begin{array}{r} 20 \overline{) 236} \\ \underline{20} \\ 36 \\ \underline{20} \end{array}$$

$$\begin{array}{r} 20 \overline{) 60} \\ \underline{20} \\ 40 \\ \underline{20} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

7. Marks obtained by 40 Students in exams

Marks	25	30	15	20	24	→ x
N.o of students	8	12	10	6	4	→ f

$$fx = 28 \ 25 \times 8, 30 \times 12, 10 \times 15, 6 \times 20, 4 \times 24$$

$$fx = 200, 360, 150, 120, 96$$

$$\text{Mean} = \frac{200 + 360 + 150 + 120 + 96}{40}$$

$$= \frac{926}{40} \Rightarrow \boxed{23.15} \text{ Ans}$$

8.

x_i	1	2	3	4	5
f_i	4	5	8	10	3

$$\text{Sum of } f_i \Rightarrow 4 + 5 + 8 + 10 + 3 \Rightarrow 30$$

$$f_i x_i \Rightarrow (1 \times 4), (2 \times 5), (3 \times 8), (4 \times 10), (5 \times 3)$$

$$= 4, 10, 24, 40, 15$$

$$\text{Mean} \Rightarrow \frac{4 + 10 + 24 + 40 + 15}{30} \Rightarrow \frac{93}{30}$$

$$\boxed{\text{Mean} = 3.1} \text{ Ans}$$

Rough

$$\begin{array}{r} 4 \\ 25 \\ \hline 10 \\ 30 \\ \hline 90 \\ 36 \\ \hline 124 \\ 12 \\ \hline 136 \\ 96 \\ \hline 232 \\ 4 \\ \hline 236 \\ 360 \\ \hline 926 \\ 40 \overline{) 926} \\ 80 \\ \hline 126 \\ 120 \\ \hline 60 \\ 40 \\ \hline 20 \\ 20 \\ \hline 0 \end{array}$$

9.

Daily Wages	100-150	150-200	200-250	250-300
n.o of workers	12	13	17	8

Solution:-

$$\text{Mean} = \frac{\sum f_i x_i}{\sum f_i} \quad x_i = \frac{\text{Lower value} + \text{Upper value}}{2}$$

Daily Wages	N.O of WORKERS	x_i	$f_i x_i$
100-150	12	125	1500
150-200	13	175	2275
200-250	17	225	3825
250-300	<u>8</u>	275	2200
	50		

$$\Rightarrow \frac{100+150}{2} \Rightarrow \frac{250}{2} \Rightarrow 125 \Rightarrow f_i x_i = 125 \times 12 = 1500$$

$$\Rightarrow \frac{200+150}{2} \Rightarrow \frac{350}{2} \Rightarrow 175 \Rightarrow f_i x_i = 175 \times 13 = 2275$$

$$\Rightarrow \frac{250+200}{2} \Rightarrow \frac{450}{2} \Rightarrow 225 \Rightarrow f_i x_i = 225 \times 17 = 3825$$

$$\Rightarrow \frac{300+250}{2} \Rightarrow \frac{550}{2} \Rightarrow 275 \Rightarrow f_i x_i = 275 \times 8 = 2200$$

$$\text{Mean} = \frac{1500 + 2275 + 3825 + 2200}{50} \Rightarrow \frac{9800}{50} \Rightarrow 196$$

Ans

50 | 9800
 50
 480
 400
 300
 12500
 12 x
 250
 25 x
 1500
 375
 13
 525
 175 x
 2275
 17
 1575
 225 x
 3825
 275 x
 2200
 15
 2200
 15 x
 44
 50 | 2200
 200
 200
 100
 11
 1500
 2275
 3825
 2200
 9800
 2
 50 | 9800
 100
 800
 50 | 9800
 50
 480

6.

KINZA-BATCH 60
MODE PRACTICE

1) 0, 3, 2, 1, 3, 5, 4, 3, 4, 2, 1, 2, 0

$$\text{Mode} = 0, 3, 2, 1 \Rightarrow \boxed{0, 1, 2, 3}$$

2) The runs scored in cricket match by 11 players is:- 7, 6, 12, 5, 10, 8, 1, 16, 9, 11, 16

Find the mean, mode, median of data

1, 6, 7, 9, 11, 16, 16, 51, 81, 101, 121

$$\text{Median} = \boxed{16} \quad \text{Mode} = \boxed{16}$$

$$\text{Mean} = \frac{1+6+7+9+11+16+16+51+81+101+121}{11}$$

$$= \frac{420}{11} \Rightarrow \boxed{38.1818} \text{ Ans}$$

3) The weight in kg of 10 students are given below:- 39, 43, 36, 38, 46, 51, 33, 44, 44, 43

Find mode

33, 36, 38, 39, 43, 43, 44, 44, 46, 51

$$\text{Mode} \Rightarrow \boxed{43, 44} \text{ Ans}$$

7.

KINZA-BATCH 60

MATHS

4) Find mode

Marks	42	36	30	45	50
N.o of students	7	10	13	8	2

Mode \Rightarrow x of higher frequency = $\boxed{30}$ Ans

5) Find median 47, 41, 52, 43, 56, 35, 49, 55, 42

35, 41, 42, 43, 47, 49⁵², 55, 56

Medianⁿ = $\boxed{47}$ Ans

b) 12, 17, 3, 14, 5, 8, 7, 15

$\underline{3, 5, 7, 8, 12, 14, 15, 17}$

Median = $\frac{8+12}{2} \Rightarrow \frac{20}{2} = \boxed{10}$ Ans

6) The following observations are arranged in ascending order. The median of the data is 25. Find x

17, x , 24, $x+7$, 35, 36, 46

Median = $x+7$

25 = $x+7$

$x = 25 - 7$

$x \Rightarrow \boxed{18}$ Ans

THE END