Ex- 4.1 (A)

1. (a) 50, 41, 47, 48, 40, 44

Average = $\frac{\text{Sum of the numbers}}{\text{No. of Quantities}}$

$= \frac{50+41+47+48+40+44}{6}$

$= 50$
$+ 41$
47
48
40
44
270

$\frac{270}{6} = 45$

(b) 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Average = $\frac{\text{Sum of the Quantities}}{\text{No. of Quantities}}$

$= \frac{10+20+30+40+50+60+70+80+90+100}{10}$

$= \frac{550}{10} = 55$

(c) 35, 42, 31, 53, 16, 34, 27

Average = $\frac{\text{Sum of the quantities}}{\text{No. of Quantities}}$

$= \frac{35+42+31+53+16+34+27}{7}$

$35 + 42 + 31 + 53 + 16 + 34 + 27 = 238$

34
$2\overline{)238}$
$-21\downarrow$
28
-28
0

$\frac{238}{7} = 34$

(d) 24, 21, 26, 25, 18, 20, 29, 23

A → Average = $\frac{\text{Sum of given quantities}}{\text{No. of quantities}}$

24
21
26
25
15
20
22
23
24

$$\begin{array}{r|l} & 23 \\ \hline 8 & 89 \\ & -16\downarrow \\ & 24 \\ & -24 \\ \hline & 0 \end{array}$$

For Average = 23

(c) $\frac{3}{8}, 1\frac{1}{4}, 2\frac{5}{6}, 6\frac{1}{3}, 4\frac{1}{2}$

$= \frac{3}{8} + \frac{5}{4} + \frac{17}{6} + \frac{22}{3} + \frac{9}{2}$ LCM of 8, 4, 6, 3 is 24

$= \frac{3\times3 + 5\times6 + 17\times4 + 22\times3 + 9\times12}{24}$

$= \frac{9 + 30 + 68 + 66 + 108}{24}$

$= \frac{281}{24}$

(d) $\frac{281}{24} \div 5 = \frac{281}{24} \times \frac{1}{5} = \frac{281}{120} = 3\frac{41}{120}$

(f) $2\frac{3}{5}, 3\frac{3}{10}, 3\frac{3}{2}, \frac{2}{5}, \frac{9}{10}, 1\frac{1}{2}$

A → ~~Average~~ $\frac{13}{5}, \frac{33}{10}, \frac{7}{2}, \frac{2}{5}, \frac{9}{10}, \frac{3}{2}$

$= \frac{13\times2 + 33\times1 + 7\times5 + 2\times2 + 9 + 3\times5}{10}$ LCM of 5, 2, 10 = 10

$= \frac{26+33+35+4+9+15}{10} = \frac{122}{10} = \frac{61}{5}$

$\frac{61}{5} \div 6 = \frac{61}{5} \times \frac{1}{6} = \frac{61}{30} = 2\frac{1}{30}$

(g) $\frac{7}{12}, 2\frac{5}{6}, 5\frac{3}{4}, \frac{7}{2}, \frac{5}{12}, \frac{2}{6}$

$= \frac{7}{12}, \frac{17}{6}, \frac{23}{4}, \frac{7}{2}, \frac{5}{12}, \frac{2}{6}$

$= \frac{7\times1 + 17\times2 + 23\times3 + 7\times6 + 5 + 2\times2}{12}$ LCM of 12, 6, 4, 2 is 12

$= \frac{7+34+69+42+5+2}{12} = \frac{123}{12} = \frac{41}{4} = 10\frac{1}{4}$

$\frac{41}{4} \div 6 = \frac{41}{4} \times \frac{1}{6} = \frac{41}{24} = 1\frac{17}{24}$

(h) $\frac{3}{4}, \frac{3}{4}, \frac{1}{2}, \frac{1}{6}, \frac{3}{8}$

$= \text{Average} = \frac{\text{Sum of the given quantities}}{\text{No. of Quantities}}$

$= \frac{1\times6 + 3\times1 + 1\times2 + 1\times4 + 3\times3}{24}$ LCM of 4, 2, 6, 8 is 24

$\frac{8+13+12+4+9}{24} = \frac{49}{24} = 2\frac{1}{24}$

$\frac{49}{24} \div 5 = \frac{49}{24} \times \frac{1}{5} = \frac{49}{120}$

3. Average of all even numbers between 7 and 23 = Average of 8, 10, 12, 14, 16, 18, 20 & 22.

Average of 8, 10, 12, 14, 16, 18, 20 & 22 =

$\frac{8+10+12+14+16+20+22}{8} = \frac{120}{8} = 15$

Average = 15

2. The rainfall in Jamshedpur for 6 consecutive years = 28.5 cm, 30.25 cm, 32.4 cm, 31.5 cm, 24 cm, & 30.25 cm

Average rainfall = $\frac{28.5+30.25+32.4+31.5+24.00+30.25}{6}$

$= \frac{177.00}{6} = 29.5$

Average rainfall = 29.5 cm

4. average of all odd numbers between 10 & 30 = Average of

11, 13, 15, 17, 19, 21, 23, 25, 27, 29

A = $\frac{11+13+15+17+19+21+23+25+27+29}{10}$

$= \frac{200}{10} = 20$

Average = 20

ANS:- 20