C.W 9/11/21

Average

Date
Page

Average = Total Sum of All Numbers
Formula Number of item in the Set

Exercise 11 A

1. Find the average

a. 50, 41, 47, 48, 40, 44

Average = Sum of the quantities / Number of quantities

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

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

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

Average = Sum of the quantities / Number 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 = $\frac{\text{Sum of the quantites}}{\text{Number of quantities}}$

$$= \frac{35+42+31+45+53+16+34}{7}$$

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

d. 24, 21, 26, 25, 18, 20, 27, 23

Average = $\frac{\text{Sum of the quantities}}{\text{Number of quantites}}$

$$= \frac{24+21+26+25+18+20+27+23}{8}$$

$= \frac{184}{8} = 23$

e. $\frac{3}{8}, 1\frac{1}{4}, 2\frac{5}{6}, 4\frac{1}{2}, 6\frac{1}{3}$

$= \frac{3}{8} + \frac{5}{4} + \frac{17}{6} + \frac{9}{2} + \frac{22}{3}$

$= \frac{9 + 30 + 68 + 108 + 176}{24} = \frac{391}{24}$

The number of quantities given = 5

Average $= \frac{391}{24} \div 5 = \frac{391}{120} = 3\frac{31}{120}$

Q.4. The rainfall for 1st year

$= 28.5$ cm

The rainfall for 2nd year

$= 30.25$ cm

The rainfall for 3rd year
$= 32.4$ cm

The rainfall for 4th year
$= 31.6$ cm

The rainfall for 5th year.
$= 24$ cm

The rainfall for 6th year
$= 30.25$ cm

$$\text{Average} = \frac{\text{Sum of the quantities}}{\text{Number of quantities}}$$

$$= \frac{28.5 + 30.25 + 32.4 + 31.6 + 24 + 30.25}{6}$$

$$= \frac{177}{6} = 29.5 \text{ cm}$$

∴ So This the average rainfall of Jamshedpur is 29.5 cm

Exercise 11 (A)

1. Find the average of

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

$= \frac{13}{5} + \frac{33}{10} + \frac{7}{2} + \frac{2}{5} + \frac{9}{10} + \frac{3}{2}$

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

The number of quantities given = 6

Average $= \frac{122}{10} \div 6$

$= \frac{122}{10} \times \frac{1}{6} = \frac{\cancel{122}^{61}}{\cancel{60}_{30}}$

$= \frac{61}{30} = 2\frac{1}{30}$

g. $\frac{7}{12}, 2\frac{5}{6}, 5\frac{3}{4}, \frac{1}{2}, \frac{5}{12}, \frac{1}{6}$

$= \frac{7}{12} + \frac{17}{6} + \frac{23}{4} + \frac{1}{2} + \frac{5}{12} + \frac{1}{6}$

$= \frac{7 + 34 + 69 + 6 + 5 + 2}{12} = \frac{123}{12}$

Number of quantities

given = 6

Average $= \frac{123}{12} \div 6$

$= \frac{123}{12} \times \frac{1}{6} = \frac{41}{24}$

$= \frac{41}{24} = 1\frac{17}{24}$

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

$= \frac{6+18+12+4+9}{24} = \frac{49}{24}$

The number of quantities given = 5

Average $= \frac{49}{24} \div 5$

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

3. Find the average of all even numbers between 7 and 23.

Solution

The even numbers between 7 and 23 are 8, 10, 12, 14, 16

18, 20, 22

Sum of the given quantities
$= 8+10+12+14+16+18+20+22 = 120$

Number of quantities given = 8

Average $= \frac{120}{8} = 15$

4. Find the average of all odd numbers between 10 and 30.

Solution

The odd numbers between 10 and 30 are 11, 13, 15, 17, 19, 21, 23, 25, 27, 29

Sum of the given quantities
$= 11+13+15+17+19+21+23+$

$25 + 27 + 29 = 200$

Number of quantities given = 10

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