

STD: VI

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MATHEMATICS

CH-12 RATIO AND PROPORTION

Ex 12.1

1. There are 20 girls and 15 boys in a class.

a. What is the ratio of number of girls to the number of boys?

\* No. of girls to No. of boys

$$\begin{array}{l} 20 : 15 \\ (\div 5) \quad 4 : 3 \end{array}$$

Ans  $\rightarrow$  4 : 3

b. What is the ratio of number of girls to the total number of students in the class?

\* Total No. of students  $\rightarrow$  20 + 15  
 $\rightarrow$  35

No. of girls to total no. of students

$$\begin{array}{l} 20 : 35 \\ (\div 4) \quad 5 : 7 \end{array}$$

Ans  $\rightarrow$  5 : 7

6. Find the ratio of the following:

b. 98 to 63

$$\begin{array}{l} 98 : 63 \\ (\div 7) \quad 14 : 9 \end{array}$$

Ans  $\rightarrow$  14 : 9

d. 30 min to 45 min

$$\begin{array}{l} 30 : 45 \\ (\div 5) \quad 6 : 9 \end{array}$$

$$(\div 3) \quad 2 : 3$$

7. Find the ratio of the following

a. 30 min to 1.5 hr

$$\begin{array}{l} 1 \text{ hr} \rightarrow 60 \text{ min} \\ 1.5 \text{ hr} \rightarrow \frac{1.5 \times 60}{\phantom{00}} \\ \rightarrow \underline{90.0} \\ \rightarrow 90 \text{ min} \end{array}$$

30 min to 90 min

$$30 : 90$$

$$(\div 3) \quad 1 : 3$$

Ans  $\rightarrow$  1 : 3

c. 55 paise to ₹ 1

$$\text{₹ 1} \rightarrow 100 \text{ paise}$$

55 paise to 100 paise

$$55 : 100$$

$$(\div 5) \quad 11 : 20$$

Ans  $\rightarrow$  11 : 20

8. In a year, Seema earns ₹ 1,50,000 and saves ₹ 50,000. Find the ratio of

a. Money that Seema earns to the money she saves

₹ 1,50,000 to ₹ 50,000

$$150000 : 50000$$

$$15 : 5$$

$$(\div 5) \quad 3 : 1$$

Ans  $\rightarrow$  3 : 1

b. Money that she saves to the money she spends (3)

\* Money she spends  $\rightarrow$  ₹ 1,50,000 - ₹ 50,000  
 $\rightarrow$  ₹ 1,00,000

₹ 50,000 to ₹ 1,00,000

~~50000~~ : ~~100000~~

5 : 10

( $\div 5$ ) 1 : 2

Ans  $\rightarrow$  1 : 2

9. There are 102 teachers in a school of 3300 students. Find the ratio of the number of teachers to the number of students.

\* School

Teachers  $\rightarrow$  102

Students  $\rightarrow$  3300

\* Ratio

No. of teachers to the No. of students

102 to 3300

102 : 3300

( $\div 6$ ) 17 : 550

Ans  $\rightarrow$  17 : 550

10. In a college, out of 4320 students, 2300 are girls. Find the ratio of

a. Number of girls to the total number of students

\* 2300 to 4320

2300 : 4320

( $\div 2$ ) 115 : 216

b. Number of boys to the number of girls (4)

\* No. of boys  $\rightarrow$  4320 - 2300

$\rightarrow$  2020

2020 to 2300

2020 : 2300

202 : 230

( $\div 2$ ) 101 : 115

11. Out of 1800 students in a school, 750 opted basket ball, 800 opted cricket and remaining opted table tennis. If a student can opt only one game, find the ratio of

a. Number of students who opted basket ball to the number of students who opted table tennis

\* No. of students who opted table tennis } = 1800 - (750 + 800)

= 1800 - 1550

= 250

750 to 250

750 : 250

( $\div 25$ ) 3 : 1

Ans  $\rightarrow$  3 : 1

b. Number of students who opted cricket  $\frac{5}{6}$  to the number of students opting basketball.

\* 800 to 750

800 : 750

80 : 75

$(\div 5)$  16 : 15

Ans  $\rightarrow$  16 : 15

c. Number of students who opted basketball to the total number of students

\* 750 to 1800

750 : 1800

75 : 180

$(\div 15)$  5 : 12

Ans  $\rightarrow$  5 : 12

12. Cost of a dozen pens is 180 and cost of 8 ball pens is ₹ 56. Find the ratio of the cost of a pen to the cost of a ball pen.

\* Cost

dozen pens  $\rightarrow$  ₹ 180

[12 pens]

one pen

$\rightarrow$   $180 \div 12$

$\rightarrow$  ₹ 15

8 ball pens  $\rightarrow$  56

1 ball pen  $\rightarrow$   $56 \div 8$

$\rightarrow$  ₹ 7

\* Ratio

Cost of a pen to the cost of a ball pen

₹ 15 to ₹ 7

15 : 7

Ans  $\rightarrow$  15 : 7

14. Divide 20 pens between Sheela and Sangeeta in the ratio of 3 : 2

\* No. of pens  $\rightarrow$  20

ratio  $\rightarrow$  3 : 2

$\rightarrow$  3 + 2

$\rightarrow$  5

Sheela  $\rightarrow$   $\frac{3}{5} \times 20$

$\rightarrow$   $3 \times 4 \rightarrow$  12

Sangeeta  $\rightarrow$   $\frac{2}{5} \times 20$

$\rightarrow$   $2 \times 4 \rightarrow$  8

\* No. of pens

Sheela get  $\rightarrow$  12

Sangeeta get  $\rightarrow$  8

15. Mother wants to divide ₹ 36 between her daughters Shreya and Bhoomika in the ratio of their ages. If age of Shreya is 15 years and age of Bhoomika is 12 years, find how much Shreya and Bhoomika will get.

Amount  $\rightarrow$  ₹ 36

ratio  $\rightarrow$  15 : 12

Sum  $\rightarrow$  15 + 12

$\rightarrow$  27

Shreya  $\rightarrow$   $\frac{15^5}{27^3} \times 36^4$

$\rightarrow$  5  $\times$  4

$\rightarrow$  ₹ 20

Bhoomika  $\rightarrow$   $\frac{12^4}{27^3} \times 36^4$

$\rightarrow$  4  $\times$  4

$\rightarrow$  ₹ 16

Ans: Shreya will get ₹ 20  
Bhoomika will get ₹ 16

16. Present age of father is 42 years and that of his son is 14 years. Find the ratio of

a. Present age of father to the present age of son

\* 42 : 14

$(\div 14)$  3 : 1

Ans  $\rightarrow$  3 : 1

b. Age of the father to the age of son, when son was 12 years old.

\* Son  $\rightarrow$  12 years [14 - 2]

Father  $\rightarrow$  42 - 2

$\rightarrow$  40 years

40 : 12

$(\div 4)$  10 : 3

Ans  $\rightarrow$  10 : 3

c. Age of father after 10 years to the age of son after 10 years

\* 42 + 10  $\rightarrow$  52

14 + 10  $\rightarrow$  24

52 : 24

$(\div 4)$  13 : 6

Ans  $\rightarrow$  13 : 6

d. Age of father to the age of son when father was 30 years old

\* Father  $\rightarrow$  30 years [42 - 12]

Son  $\rightarrow$  14 - 12

$\rightarrow$  2 years

\* 30 : 2

$\div (2)$  15 : 1