

Ratio

Example .

Simplify each ratio : (a) 6 : 21 (b) 15 : 20

Answers :

(a) 6 : 21 divide each number by 3 (b) 15 : 20 divide each number by 5
2 : 7 5 : 4

1. Simplify each of the following ratios :

(a) 6 : 15 (b) 18 : 21 (c) 8 : 12 (d) 10 : 25 (e) 12 : 2
(f) 32 : 14 (g) 25 : 90 (h) 7 : 56 (i) 30 : 45 (j) 51 : 34

Example .

Simplify as far as possible the ratio : 20 : 8 : 28

Answer :

The biggest number that divides into 20, 8 and 28 is 4 (the highest common factor)

So to get simplest answer we divide each number by 4

5 : 2 : 7

2. In the same way, simplify these ratios ;

(a) 2 : 6 : 12 (b) 7 : 28 : 14 (c) 20 : 10 : 15 (d) 24 : 40 : 16
(e) 27 : 9 : 18 (f) 45 : 15 : 30 (g) 30 : 20 : 10 (h) 49 : 14 : 21

Example.

The ratio of boys to girls in a class is 3 : 4

If there are 15 boys, how many girls are there ?

Answer :

<u>Boys</u>	<u>Girls</u>
3	4
X 5	X 5
15	20

3. Copy and complete these tables :

(a) <u>Men</u>	<u>Women</u>	(b) <u>red</u>	<u>black</u>	(c) <u>white</u>	<u>green</u>	(d) <u>large</u>	<u>small</u>
2	3	4	3	5	3	2	5
X3	X?	X5	X?	X?	X7	X?	X6
6	?	20	?	?	21	?	30

Example

The ratio of white balls to black balls is 8 : 5

(a) If there are 24 black balls, how many white balls are there ?

(b) If there are 40 white balls, how many black balls are there ?

Answer:

(a)	<u>Black</u>	<u>White</u>	(b)	<u>Black</u>	<u>White</u>
	8	5		8	5
	X3	X3		X8	X8
	24	15		64	40

4. The ratio of red balls to green balls is 5 : 7

(a) If there are 15 red balls, how many green are there ?

(b) If there are 42 green balls , how many red are there ?

5. The ratio of books to magazines is 3 : 20

(a) If there are 15 books, how many magazines are there ?

(b) If there are 300 magazines, how many books are there ?

6. The ratio of days it is sunny to days it rains is 7 : 3
- (a) If it rains for 30 days, how many sunny days are there ?
- (b) If there are 21 sunny days, how many days does it rain ?

Example.

£2700 is to be divided between Sophie and Rebecca in the ratio 4 : 5.

How much does each girl get ?

Answer :

$$4 + 5 = 9$$

$$2700/9 = 300$$

Sophie gets $4 \times £300 = £1200$ Rebecca gets $5 \times £300 = £1500$

7. £320 is to be divided between John and Paul in the ratio 3 : 5
- How much does each get ?
8. £5500 is to be shared by Ryan and Tom in the ratio 7 ; 4.
- How much does each get ?
9. £15.20 is to be divided between Chris and Euan in the ratio 3 : 7
- How much does each get ?
10. If the total number of shrubs and trees in a garden is 92, and the ratio of shrubs to trees is 20 : 3, how many of each are there ?
11. Julie and David invest £4200 in a new company.
- (a) If the money each of them put in was in the ratio 3 : 7,
- How much did each invest in the new company ?
- (b) Their investment gives a profit of £7400.
- They decide to split the profits in the same ratio.
- How much of the profit does each get ?

Example.

A sum of money is split among three friends as follows.

Kelly : Susan : Anne

4 : 3 : 1

If Anne receives £30, how much is there altogether ?

Answer :	Kelly :	Susan :	Anne	
	4 X £30	3 X £30	1 X £30	
	£120	£90	£30	Total = £240

12. A sum of money is split among 3 friends as follows :

Jim : Dave : Bob

5 : 7 : 1

If Bob receives £20, how much is there altogether ?

13. A sum of money is divided in the ratio as follows :

Pauline : Aileen : Kathleen : Nora

7 : 5 : 4 : 1

If Nora receives £32, how much is there altogether ?

14. The ratio of coloured balls in a box is as follows :

RED : YELLOW : BLUE : GREEN

3 : 4 : 2 : 1

(a) If there are 10 green balls, how many balls are there altogether ?

(b) How many yellow balls are there ?

(c) How many more red balls are there than blue balls ?

(d) In another box there are a total of 3200 balls.

The ratios remain the same.

How many balls are there now of each colour ?

Mrs McLaughlin

Mr Mailley

