

Name:

Date:

Score:

4

SIMPLE RATIO

Part A : Part B

Example:

The ratio of the number of apples to oranges in a basket is 3 : 5. If there are 24 more oranges than apples, how many fruits are there altogether?

Apples : Oranges

3 : 5

5-3units = 24

2 units = 24

1 units = 12

8 units = 96



Task: Complete the questions below. Remember to include units in your answer.

1. In a bag, the ratio of red marbles to blue marbles is 5 : 2.
If there are 30 red marbles, how many blue marbles are there?

2. The ratio of James' age to his sister's age is 7 : 4. If the sum of their ages is 44 years, how much older is James than his sister?

Name:

Date:

Score:

4

ONE PART CHANGE

A : B

-/+

Example:

A box contains red and blue marbles. The ratio of red marbles to blue marbles is 2 : 1. After adding 6 more blue marbles, the ratio becomes 2 : 3. How many red marbles are there?

Red : Blue

2 : 1

+6

2 : 3

3 - 1 units = 6 marbles

2 units = 6 marbles



Task: Complete the questions below. Remember to include units in your answer.

1. The ratio of John's money to Peter's money was 5 : 2. After John spent \$30, the ratio became 1 : 1. How much money did John have at first?

2. The ratio of boys to girls in a choir was 5 : 6. After 10 boys left the choir, the new ratio became 1 : 2. How many girls were in the choir?

Name:

Date:

Score: **4**

4

TOTAL/DIFFERENCE UNCHANGED

A : B : Total

$$A : B : A + B$$

A : B : Difference

$$A : B : A - B$$

Example:

At first, the ratio of John's marbles to Peter's marbles was 5 : 1.

After John gave Peter 12 of his marbles, the new ratio became 1 : 1.

How many marbles did Peter have at the end?



John : Peter : Total

5 : 1: 6

-12

1 : 1 : 2

x3

3 : 3 : 6

x3

5 - 2 units = 3 marbles

3 units = 12 marbles

1 unit = 12 marbles $\div$ 3

= 4 marbles

Task: Complete the questions below. Remember to include units in your answer.

1. The ratio of the volume of water in Jug A to Jug B is 5 : 4. After 500ml of water is poured from Jug A to Jug B, the new ratio is 1 : 1. What is the total volume of water in the two jugs?

2. The ratio of Ali's money to Ben's money was 2 : 1. After each of them spent \$12 on a book, the ratio became 4 : 1. How much money did Ali have at first?

Name:

Date:

Score:

4

EVERYTHING CHANGED

$$A : B$$

$$\begin{array}{c} \times \\ A+X : B+Y \end{array}$$

Example:

At first, the ratio of the number of Marvel comic books to DC comic books that Sam had was 3 : 2.

After his father bought him 12 more Marvel comic books and 24 more DC comic books, the ratio became 3 : 4.

How many Marvel comic books did Sam have at first?



Marvel : DC

$$3 : 2$$

$$\begin{array}{c} +12 \quad \times \quad +24 \\ 3 : 4 \end{array}$$

$$3 : 4$$

$$3 (2u+24) = 4 (3u+12)$$

$$6u + 72 = 12u + 48$$

$$\begin{aligned} 6u &= 72 - 36 \\ &= 24 \text{ comics} \end{aligned}$$

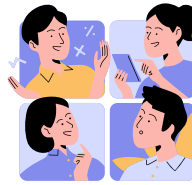
$$\begin{aligned} 1u &= 24 \div 6 \\ &= 4 \text{ comics} \end{aligned}$$

$$\begin{aligned} 3u &= 4 \times 3 \\ &= 12 \text{ comics} \end{aligned}$$

Task: Complete the questions below. Remember to include units in your answer.

1. The ratio of the number of foreign stamps to local stamps that Liam had in his collection was 3 : 1.
After he bought 30 more foreign stamps and gave away 10 local stamps, the new ratio became 5 : 1.
How many local stamps did Liam have at first?

ANSWER SHEET



SIMPLE RATIO

1. $30 \div 5 = 6$
 $6 \times 2 = 12$

2. $44 \div 4 = 11$
 Difference in parts = $7 - 4 = 3$ units
 Age difference = $3 \text{ units} \times 4 = 12 \text{ years}$

ONE PART CHANGE

1. New ratio: $2 : 2$
 $5 - 2u = \$30, 1u = \10
 $5u = 10 \times 5 = \$50$

2. New ratio: $3 : 6$
 $5 - 3u = 10, 1u = 10 \div 2 = 5$
 $5 \times 6 = 30$

TOTAL/DIFFERENCE UNCHANGED

1. A:B:Total
 $10u : 8u : 18u$
 After:
 $9u : 9u : 18u$
 Water poured from A to B: $10u - 9u = 1u$
 $1u = 500 \text{ ml}$
 Total volume = $18u = 18 \times 500 \text{ ml} = 9000 \text{ ml}$

2. Constant Difference: \$32
 At first: Ali:Ben:Diff = $6u : 3u : 3u$
 After: Ali:Ben:Diff = $4u : 1u : 3u$
 $6u - 4u = 2u$
 $2u = \$12$
 $1u = \$6$
 $6u = 6 \times \$6 = \36

EVERYTHING CHANGED

1. $1(3u + 30) = 5(1u - 10)$
 $3u + 30 = 5u - 50$
 Rearrange the equation:
 $30 + 50 = 5u - 3u$
 $80 = 2u$
 $u = 40$

Initial Local stamps = $1u = 1 \times 40 = 40$

There are 12 blue marbles.

12 years

\$ 50

30 girls

9000ml

\$36

40 Stamps