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# GCSE RATIO

a) Writing Ratio in Simple Forms

b) Sharing Ratio

c) Three Way Ratio

d) Ratio to Fractions

d) Ratio Word Problems

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# Ratio in Simple Forms

Rule

a) Write the ratio

b) Divide by the Highest Common Factor

Q1 Write the following in the simple forms

a) 10 : 25

Divide by 5

2 : 5

b) 9 : 27

Divide by 9

1 : 3

Q2 $100 was divided between A and B. A received $75 and rest was given to B. Write the ratio of A: B

A : B

75 25

3 : 1

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# SHARING RATIO

Rule

a) Add the ratio
b) Divide the total with the sum of ratio to get the value of one part
c) Find the other parts by multiplying with one part

a) Divide $50 to 3:2

Sum of ratio= 3+2 = 5

Divide total by sum $\frac{50}{5}$ = $10 (one part)

x10 ( 3 : 2 ) x10

$30 and $20

b) Divide 42 balls in the ratio of 1:3:2

Sum of ratio = 6

Value of one part $\frac{42}{6} = 7$

1 : 3 : 2 ) x7

7 : 21 : 14

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# THREE WAY RATIO

Rule

a) Make a common ratio same by multiplying with least common multiple

b) Then Write them together

$x:y = 2:5$ $\quad y:z = 15:3$

Work out $x:y:z$

$x:y = 2:5$ $\times 3$ $\quad y:z = 15:3$ (common ratio is y which is 5 and 15 with L.C.M=15)

$x:y \quad 6:15 \quad y:z = 15:3$

$6:15:3$


# THREE WAY RATIO PROBLEMS

Charlie, Ben and Jerry share $99.
The ratio of Charlie to Ben is 9:5
The ratio of Ben to Jerry is 2:1
How much money will each get ?

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# THREE WAY RATIO PROBLEMS

Charlie, Ben and Jerry share $99.
The ratio of Charlie to Ben is 9:5
The ratio of Ben to Jerry is 2:1
How much money will each get ?

Charlie : Ben

9 : 5 ) x2

18 : 10

Ben : Jerry

x5 ( 2 : 1

10 : 5

Charlie : Ben : Jerry.

18 : 10 : 5

Charlie = $\frac{18}{33} \times 99 = \$54$

Ben = $\frac{10}{33} \times 99 = \$30$

Jerry = $\frac{5}{33} \times 99 = \$15$

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# Ratio to Fractions

Rule

Make denominators the same

Write the numerator as ratio

a) In a bag there are red, blue and white counters in the ratio of 2:3:4. Write the fraction of each counter

b) In a bag there are red and blue balls. 3/5 of the balls are red. Work out the ratio of red to blue.

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# Ratio to Fractions

**Rule**

Make denominators the same

Write the numerator as ratio

a) In a bag there are red, blue and white counters in the ratio of 2:3:4. Write the fraction of each counter

Red = $\frac{2}{9}$ Blue = $\frac{3}{9}$ White = $\frac{4}{9}$

b) In a bag there are red and blue balls. 3/5 of the balls are red. Work out the ratio of red to blue.

Red = $\frac{3}{5}$ Blue $\frac{2}{5}$

Red : Blue = 3 : 2

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# WORD PROBLEMS

Eva salary is $3000. She pays 1/3 of the amount on rent. Rest of the money she spends in travel, shopping and movies in the ratio 1:4:3. Work out the money she spends in movies

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# WORD PROBLEMS

Eva salary is $3000. She pays 1/3 of the amount on rent. Rest of the money she spends in travel, shopping and movies in the ratio 1:4:3. Work out the money she spends in movies

Rent = $\frac{1}{3}$ of $3000

= $1000

Money left = $2000

$2000 in the ratio 1:4:3

= $\frac{1}{8}$ X $2000 = $250

X250

Travel : Shopping : Movies

1 : 4 : 3

$250 : $1000 : $750