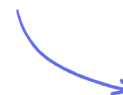


Introduction to Ratios

Introduction to Ratios / Equivalent & Simplified Ratios / Sharing in a Ratio

Easy (6 questions)	/13
Medium (8 questions)	/22
Hard (5 questions)	/17
Total Marks	/52

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Easy Questions

- 1 When full, a cruise ship carries 880 guests and 360 crew.

Write the ratio guests : crew in its simplest form.

(1 mark)

- 2 A box contains 22 coloured pencils.
6 pencils are pink, 9 pencils are blue and 7 pencils are yellow.

Write down the ratio pink pencils : not pink pencils.
Give your answer in its simplest form.

(2 marks)

- 3 Maia shares \$3000 between her three children. She gives the eldest child \$1200, the second eldest child \$1000 and the rest to the youngest child.

Write this information as a ratio in its simplest form.

..... : :
eldest *youngest*

(2 marks)

- 4 Divide 120 in the ratio 1 : 2.

..... :

(2 marks)

5 (a) A car company has three sales people, Anna, Mustapha and Joshua.

During March, Anna sold 21 cars, Mustapha sold 12 cars and Joshua sold 15 cars.

Write down and simplify the ratio of the number of cars they sold during March.

Anna : Mustapha : Joshua = : :

(2 marks)

(b) Each month, they receive a bonus which is proportional to the number of cars they sell.
The total bonus in March is \$1248.

i) Show that Anna receives a bonus of \$546.

[1]

ii) Calculate the bonuses received by Mustapha and Joshua.

Mustapha \$

Joshua \$ [2]

(3 marks)

6 Write the ratio 11.25 : 3.75 in the form $n:1$.

(1 mark)

Medium Questions

- 1 Alan and Beth share \$1190 in the ratio Alan : Beth = 5 : 2.

Work out how much Alan receives.

\$.....

(2 marks)

- 2 One week the café makes a profit of \$1027.

George, Louis and Beatriz share this profit in the ratio

George : Louis : Beatriz = 7 : 4 : 2.

Calculate the amount of money they each receive.

George \$

Louis \$

Beatriz \$

(3 marks)

- 3 Alexa, Ben and Chloe share the profits from their restaurant in the ratio 2 : 6 : 7.

One year the restaurant makes a profit of \$60000.

Work out how much each receives.

Alexa = \$

Ben = \$

Chloe = \$

(3 marks)

4 Share 518 in the ratio 2 : 5.

(2 marks)

5 Asif and Ben share \$2100 in the ratio Asif : Ben = 3 : 7.

Work out how much Asif receives.

\$

(2 marks)

6 (a) The music teacher at a school forms an orchestra.

The instruments in the orchestra are 36 string, 15 woodwind and 12 brass.

Write the ratio string : woodwind : brass in its simplest form.

..... : :

(2 marks)

(b) The 36 string instruments are violins, cellos and double basses in the ratio

violins : cellos : double basses = 9 : 2 : 1.

i) Show that the number of violins is 27.

[1]

ii) Work out the number of cellos and the number of double basses.

Cellos

Double basses [2]

(3 marks)

7 A car park has 880 parking spaces.

Some of the spaces are reserved.

The ratio of reserved spaces : not reserved spaces = 1 : 10.

Work out the number of spaces that are not reserved.

(2 marks)

8 (a) A patio is made of white stones and brown stones.

$\frac{1}{5}$ of the stones are white.

Write down the ratio of white stones to brown stones. Give your ratio in its simplest form with integer parts.

(1 mark)

(b) There is a total of 350 tiles.

Work out the total number of brown tiles.

(2 marks)

Hard Questions

- 1 A particular colour of paint consists of 3 colours; yellow, red, and blue, mixed in the ratio 5 : 6 : 4 respectively.

Dan is painting the outside of his house, and has calculated it will require 42 litres of paint in total.

Calculate how many litres of yellow, red, and blue paint Dan will need.

(3 marks)

- 2 Holly is making a cheese sauce.

She combines butter, flour, milk, and cheese so that

weight of butter : weight of flour : weight of milk : weight of cheese = 1 : 1 : 9 : 5 .

Holly needs to make 1.6 kg of cheese sauce all together.

Cheese costs £4.88 for 900 g.

Work out the cost of the cheese needed to make 1.6 kg of cheese sauce.

(4 marks)

3 A stationery shop sells different types of envelopes. They are called C4, C5, and C6.

There are:

4 envelopes in each pack of C4 envelopes.

10 envelopes in each pack of C5 envelopes.

12 envelopes in each pack of C6 envelopes.

On Tuesday, the ratio of the **number of packs** of each type of envelope sold was:

$$C4 : C5 : C6 = 7 : 3 : 4$$

A total of 424 envelopes were sold.

Work out the number of C4 envelopes sold.

(4 marks)

4 (a) Gabriela designs the seating layout for a new theatre. There are three sections of seats, A, B and C.

Section A has 152 seats.

Section B has 171 seats.

Section C has 57 seats.

Write down and simplify the ratio of the number of seats in each section A : B : C.

$$A : B : C = \dots : \dots : \dots$$

(2 marks)

(b) For a concert in the theatre, the ticket prices are in the ratio

$$A : B : C = 9 : 7 : 4.$$

A ticket for Section C costs \$6.

i) Show that a ticket for Section B costs \$10.50 .

[1]

ii) Find the cost of a ticket for Section A.

\$ [1]

iii) The table shows the number of tickets sold in each section.

Section	Number of tickets sold
A	120
B	136
C	30

Calculate the total amount received from the ticket sales.

\$ [3]

iv) The concert costs \$4500 to organise.

Calculate the amount received from the ticket sales as a percentage of the \$4500.

[1]

(2 marks)

- 5 Raoul makes a profit when he sells his watch for \$36.

The ratio of the price Raoul paid for the watch and the profit he makes is price paid : profit = 7 : 2.

Work out the profit that Raoul makes.

\$.....

(2 marks)