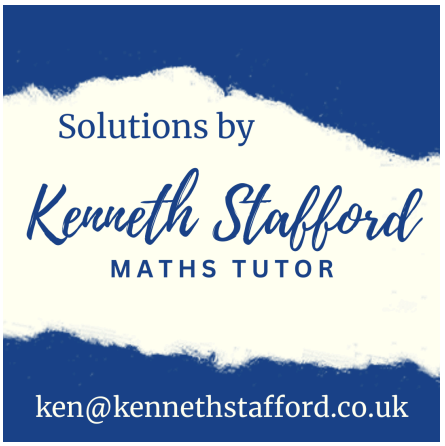
Name: SOLUTIONS

GCSE (1 - 9)

Combining Ratios





These questions are compiled from *released* Pearson Edexcel GCSE maths exam papers
They contain exam questions from up until the ***Summer 2023*** exam series
More recent exam papers do exist but are withheld for mock exams
As new exam papers are released these worksheets will gradually be updated
The ***most current*** version of these worksheets will always be available at: kennethstafford.co.uk

Question	Where the question appeared
1	Edexcel, GCSE, Autumn 2017, Paper 3F, Q22 Edexcel, GCSE, Autumn 2017, Paper 3H, Q04
2	Edexcel, GCSE, Summer 2018, Paper 1F, Q20 Edexcel, GCSE, Summer 2018, Paper 1H, Q02
3	Edexcel, GCSE, Autumn 2020, Paper 1F, Q29
4	Edexcel, GCSE, Summer 2017, Paper 3H, Q12
5	Edexcel, GCSE, Autumn 2021, Paper 3H, Q14
6	Edexcel, GCSE, November 2022, Paper 1F, Q24
7	Edexcel, GCSE, November 2022, Paper 2F, Q12

1

There are only blue pens, green pens and red pens in a box.

The ratio of the number of blue pens to the number of green pens is 2 : 5
The ratio of the number of green pens to the number of red pens is 4 : 1

There are less than 100 pens in the box.

What is the greatest possible number of red pens in the box?

B : G : R

2 : 5

4 : 1

8 : 20 : 5 (33)

B : G : G

8 : 20 : 5 (33)

16 : 40 : 10 (66)

24 : 60 : 15 (99)

The LCM of 5 and 4 is 20.

15

(Total for Question 22 is 3 marks)

[Edexcel, GCSE, Autumn 2017, Paper 3F, Q22]
[Edexcel, GCSE, Autumn 2017, Paper 3H, Q04]

2

In a village

the number of houses and the number of flats are in the ratio 7 : 4
the number of flats and the number of bungalows are in the ratio 8 : 5

There are 50 bungalows in the village.

How many houses are there in the village?

H : F : B
2x 7 : 4 x2
8 : 5
14 : 8 : 5
x10
140 : 80 : 50

140

(Total for Question 20 is 3 marks)

[Edexcel, GCSE, Summer 2018, Paper 1F, Q20]
[Edexcel, GCSE, Summer 2018, Paper 1H, Q02]

3

Given that $\frac{a}{b} = \frac{2}{5}$ and $\frac{b}{c} = \frac{3}{4}$

find $a : b : c$

$a : b = 2 : 5$ $\quad$ $b : c = 3 : 4$

$a : b : c$

$2 : 5$

$3 : 4$

$6 : 15 : 20$

$6 : 15 : 20$

(Total for Question 29 is 3 marks)

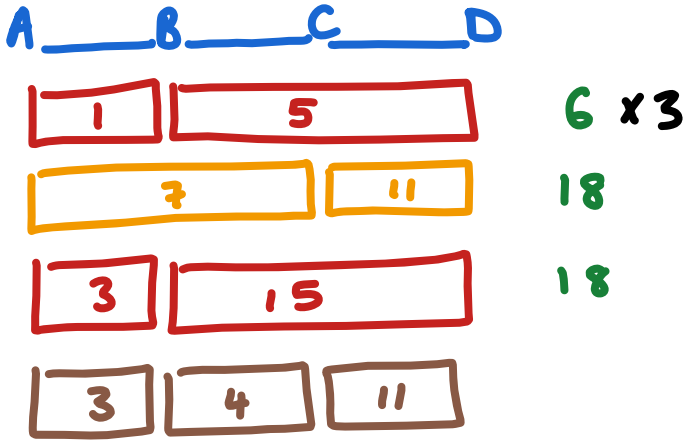
[Edexcel, GCSE, Autumn 2020, Paper 1F, Q29]

4

The points A, B, C and D lie in order on a straight line.

$AB : BD = 1 : 5$
$AC : CD = 7 : 11$

Work out $AB : BC : CD$



3 : 4 : 11

(Total for Question 12 is 3 marks)

[Edexcel, GCSE, Summer 2017, Paper 3H, Q12]

5.

Olivia and Jessica have in total half as many sweets as Fran and Gary have in total.

Fran and Gary share their sweets in the ratio 2 : 3

Olivia and Jessica share their sweets in the ratio 9 : 1

Fran got w sweets.
Gary got x sweets.
Olivia got y sweets.
Jessica got z sweets.

Find, in its simplest form, $w : x : y : z$

F : G
2 : 3

O : J
9 : 1

½ 100 sweets → 50 sweets than

100

40 : 60

50

45 : 5

40 : 60 : 45 : 5 ÷5

8 : 12 : 9 : 1

8 : 12 : 9 : 1

(Total for Question 14 is 4 marks)

[Edexcel, GCSE, Autumn 2021, Paper 3H, Q14]

6

Rizwan writes down three numbers a, b and c

$a : b = 1 : 3$
$b : c = 6 : 5$

(a) (i) Find $a : b : c$

a : b : c
2 x 1 : 3 x2
6 : 5
2 : 6 : 5

2:6:5

(2)

(ii) Express a as a fraction of the total of the three numbers a, b and c

2 + 6 + 5 = 13

2/13

(2)

Emma writes down three numbers m, n and p

$n = 2m$
$p = 5n$

(b) Find $m : p$

n = 2m
5n = 10m

p = 10m
10m = p
m : p
1 : 10

1 : 10

(2)

(Total for Question 24 is 6 marks)

[Edexcel, GCSE, November 2022, Paper 1F, Q24]

7

Amol, Gemma and Harry each have a number of sweets.

The number of sweets that Gemma has is 6 times the number of sweets that Amol has.
The number of sweets that Harry has is half the number of sweets that Gemma has.

Write down the ratio

the number of sweets that Amol has	:	the number of sweets that Gemma has	:	the number of sweets that Harry has

Amol = x

Gemma = $6x$

Harry = $3x$

$1x : 6x : 3x$

1 : 6 : 3

(Total for Question 12 is 2 marks)

[Edexcel, GCSE, November 2022, Paper 2F, Q12]