



Year 6

Mathematics

Practice Questions

Ratio and Proportion

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Section One:

Ratio

1

Mari is the presenter of a weekly radio show.

[2004]



She always plays **five** new songs for every **two** old songs.

Last week she played 15 **new** songs.

How many songs did she play **altogether**?

Show your method

[2 marks]

2

Amina planted some seeds.

[2017]

For every 3 seeds Amina planted, only 2 seeds grew.

Altogether, 12 seeds grew.

How many seeds did Amina **plant**?

[1 mark]

7

A dessert has both fruit and yoghurt inside.

[Extra]



Altogether, the mass of the fruit and yoghurt is **175g**.

The **ratio** of the mass of **fruit** to the mass of **yoghurt** is **2 : 5**

What is the mass of the yoghurt?

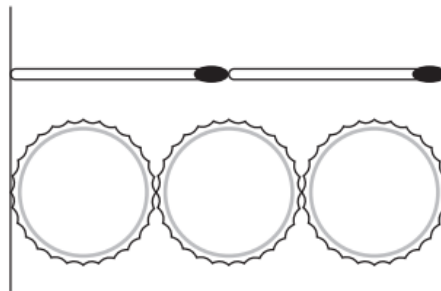
_____ g

[1 mark]

8

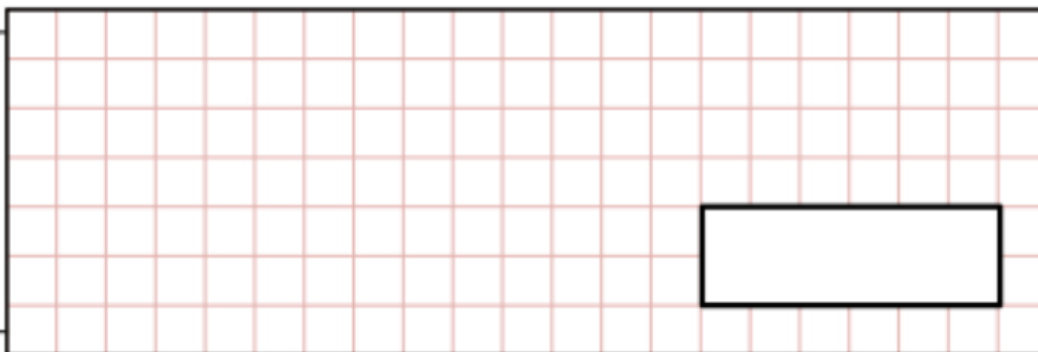
Two matchsticks have the same length as three bottle tops.

[2007]



How many bottle tops will have the same length as 50 matchsticks?

Show your method



[2 marks]

18

Susan mixes red and blue paint to make purple paint.

[Extra]

2 parts of red paint with 3 parts of blue paint make purple paint.

Susan has 50 ml of red and 100 ml of blue.



What is the maximum amount of purple paint she can make?

Show your method

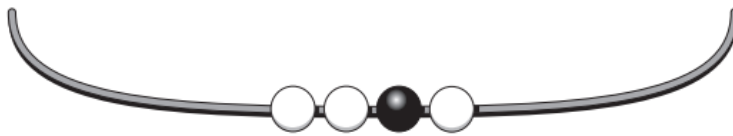
A large grid for showing the method. A checkmark is drawn in the upper right quadrant of the grid. Below the checkmark, there is a rectangular box for the final answer.

[2 marks]

19

On this necklace the ratio of black beads to white beads is $1 : 3$

[Extra]



How many **more** black beads do you need to add to make the ratio of black to white $3 : 1$?



_____ black beads

[1 mark]

Section Two:

Proportion

1

100g of cheese costs 46p.

[Extra]

Peter buys 250g of the cheese.

How much does he pay?



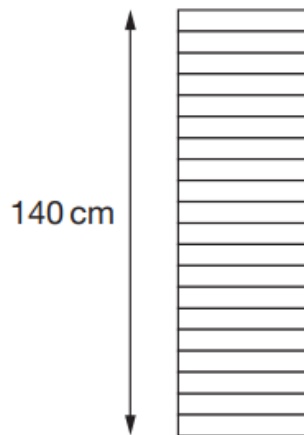
£

[1 mark]

2

A stack of 20 identical boxes is 140 cm tall.

[2016]

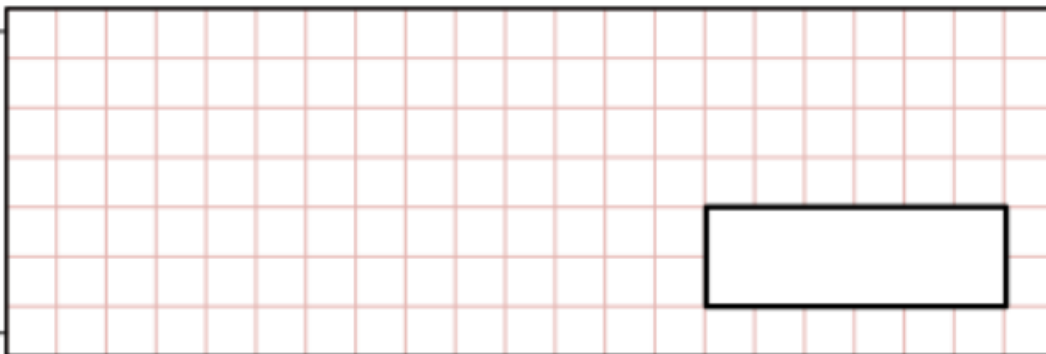


Not
actual
size

Stefan takes **three** boxes off the top.

How tall is the stack now?

Show your method



[2 marks]

3

A meal in a restaurant costs the same for each person.

[Extra]

For **11** people the total cost is **£253**

What is the total cost for 12 people?

Show your method

[2 marks]

4

[2004]



Every **100g** of brown bread contains **6g** of fibre.

A loaf of bread weighs 800g and has 20 equal slices.

How much fibre is there in **one** slice?

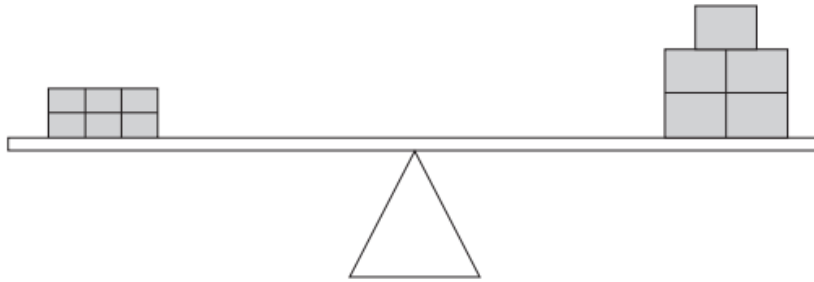
Show your method

[2 marks]

14

6 small bricks have the same mass as 5 large bricks.

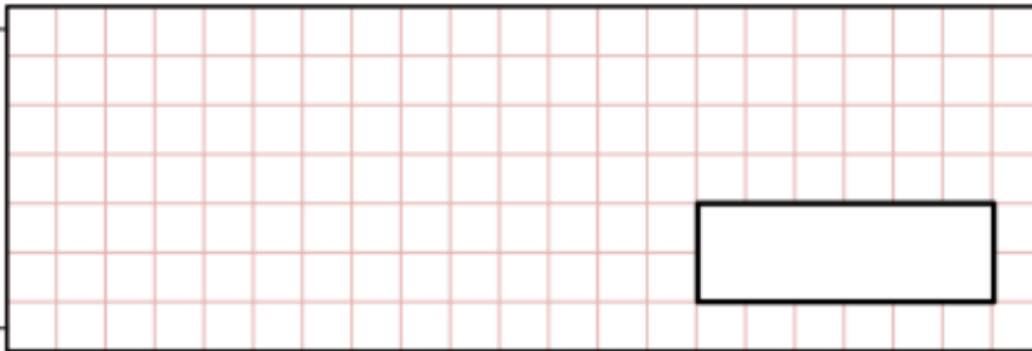
[2016]



The mass of one small brick is 2.5 kg.

What is the mass of one large brick?

Show your method

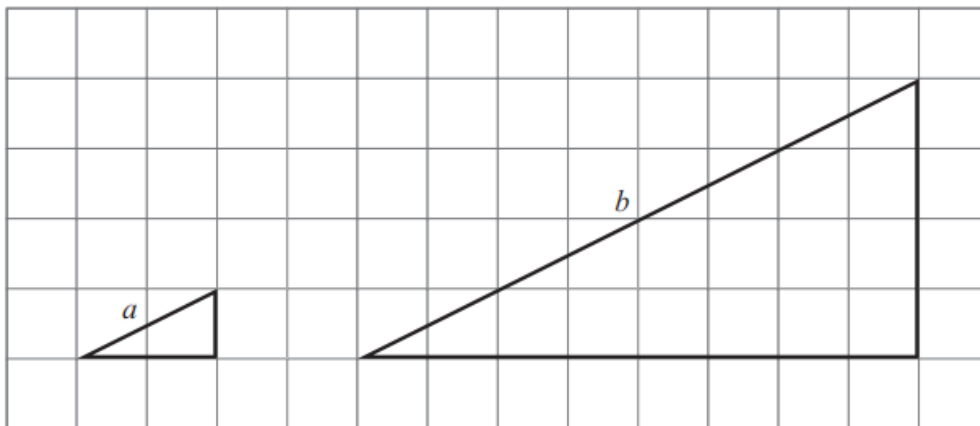


[2 marks]

15

Here are two similar right-angled triangles.

[2017]



Write the ratio of side a to side b .

$a:b =$ $:$

[1 mark]

21
22

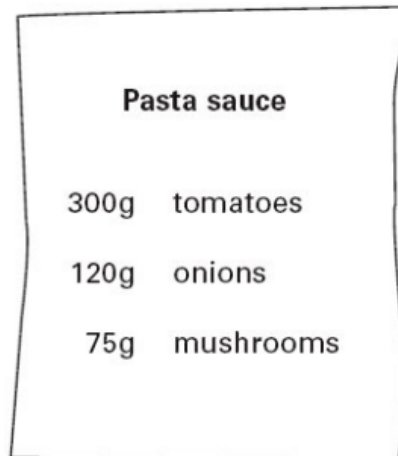
Section Three:

Recipes

1

Here is a recipe for pasta sauce.

[Extra]



Josh makes the pasta sauce using 900g of tomatoes.

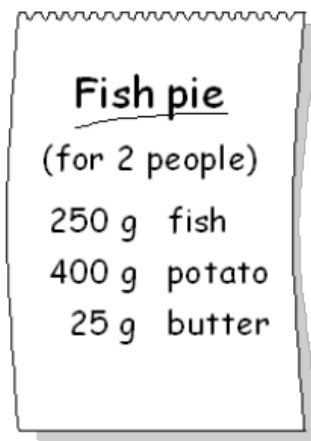
What weight of onions should he use?

[1 mark]

2

Here are the ingredients for fish pie for two people.

[Extra]



Omar makes fish pie for 3 people.

How many grams of fish should he use?

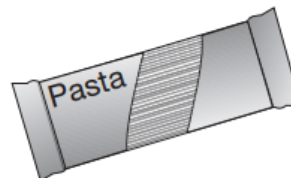
[1 mark]

3

Chen is cooking some pasta.

[2014]

The recipe says he needs 350 grams of pasta for 4 people.



How many **kilograms** of pasta does he need for **12 people**?

Show your method

A large grid for showing the method, with a rectangular box provided for the final answer.

[2 marks]

4

[2000]



Shortcrust pastry is made using flour, margarine and lard.

The **flour, margarine** and **lard** are mixed in the ratio

8 : 3 : 2 by weight.

How many grams of **margarine** and **lard** are needed to mix with **200 grams** of flour?

margarine

 g

lard

 g

[2 marks]

5

Here are the ingredients for chocolate ice cream.

[2016S]

cream	400 ml
milk	500 ml
egg yolks	4
chocolate	120 g
sugar	100 g



Stefan has only 300ml of cream to make chocolate ice cream.

How much **chocolate** should he use?

Show your method

A large grid area for showing the method, with a rectangular box on the right side for the final answer.

[2 marks]

6

Sapna makes a fruit salad using bananas, oranges and apples.

[2005]

For every one banana, she uses 2 oranges and 3 apples.

Sapna uses 24 fruits.

How many oranges does she use?

Show your method

A large grid area for showing the method, with a rectangular box on the right side for the final answer.

[2 marks]

7

This is Kirsty's recipe for breakfast cereal.

[2015]

- 50 grams of oats
- 30 grams of raisins
- 40 grams of nuts



If she uses 125 grams of oats, how many grams of raisins does she need?

Show your method

<div style="border: 1px solid black; width: 100px; height: 30px;"></div>	
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[2 marks]

8

Here is a recipe for fruit squash.

[Extra]

<i>Oranges (chopped)</i>	<i>300 g</i>
<i>Lemonade</i>	<i>1500 ml</i>
<i>Orange juice</i>	<i>750 ml</i>
<i>Makes enough for 6 people</i>	

Trina wants to make enough squash for 10 people.

How many millilitres of lemonade will she need?

Show your method

<div style="border: 1px solid black; width: 100px; height: 30px;"></div>	
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[1 mark]

29

30