1

[2004]

Mari is the presenter of a weekly radio show.

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

[2017]

Amina planted some seeds.

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

Altogether, 12 seeds grew.

How many seeds did Amina **plant**?

[1 mark]

3 David and his friends prepare a picnic.

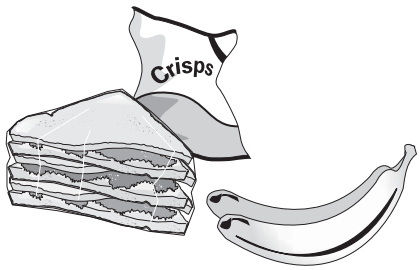
[2006]

Each person at the picnic will get:

3 sandwiches

2 bananas

1 packet of crisps



The children pack **45** sandwiches.

How many **bananas** do they pack?

Show your method

[2 marks]

4 A gardener plants tulip bulbs in a flower bed.

[2012]

She plants 3 red bulbs for every 4 white bulbs.

She plants 60 red bulbs.

How many **white** bulbs does she plant?

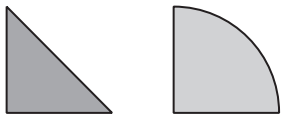
Show your method

[2 marks]

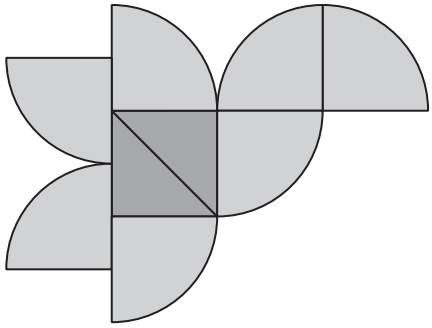
5

[2011]

Joe has some triangular tiles and some quarter-circle tiles.



He uses 2 triangles and 7 quarter-circles to make this 'flying bird' design.



Joe makes some more of these 'flying bird' designs.

He uses 56 quarter-circles.

How many **triangles** does he use?

Show your method

[2 marks]

6

[Extra]

Two numbers are in the ratio **4 : 5**

One of the numbers is **60**

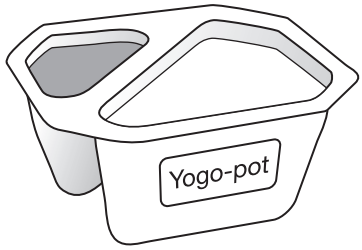
There are two possible values for the other number.

What are the two possible values?

[2 marks]

7 [Extra]

A dessert has both fruit and yoghurt inside.



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**

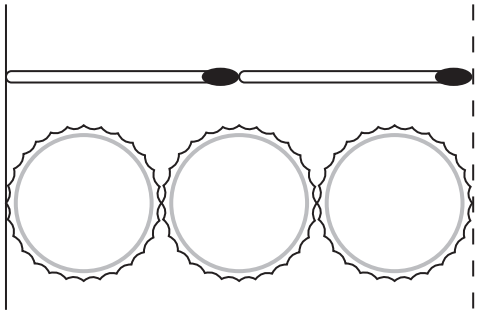
What is the mass of the yoghurt?

_____ g

[1 mark]

8 [2007]

Two matchsticks have the same length as three bottle tops.



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

Show your method

[2 marks]

9

[Extra]

Rita buys a box of chocolates.

For every 2 plain chocolates there are 3 milk chocolates.

There are 30 chocolates in the box.

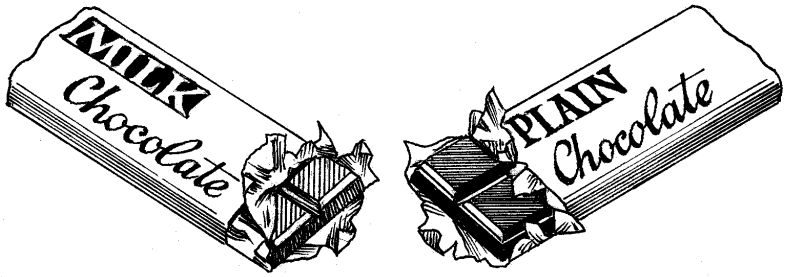
How many milk chocolates are there?

Show your method

[2 marks]

10

[2001]



In a survey, the **ratio** of the number of people who preferred **milk chocolate** to those who preferred **plain chocolate** was **5 : 3**

46 more people preferred milk chocolate, to plain chocolate.

How many people were in the survey?

Show your method

[2 marks]

11 [Extra]

There are 90 children in Year 6 at Woodland Junior School.

They are split into three classes.

Class	Number in class
6M	27
6P	33
6T	30

Each child chose football **or** netball **or** hockey.

In **6M**, 13 children chose hockey.
The rest of the class were split equally between football and netball.

In **6P**, 9 children chose netball.
Twice as many children chose football as chose hockey.

In **6T**, the ratio of children who chose
football to netball to hockey was 1:2:3

Complete this table.

Class	Number in class	Football	Netball	Hockey
6M	27			13
6P	33		9	
6T	30			

[3 marks]

12 The heights of Russian dolls are in the ratio **4 : 6 : 7**

[Extra]

In a set of dolls, the height of the **middle** doll is **9 cm**.

What are the heights of the other dolls?

..... cm	9 ..... cm	..... cm
smallest	middle	tallest

In another set of dolls, the height of the **tallest** doll is **9 cm**.

What are the heights of the other dolls?

Show your working, and give your answers to **1 decimal place**.

..... cm	..... cm	9 ..... cm
smallest	middle	tallest

[3 marks]

13 Work out the number of boys and girls in each class below.

[Extra]

In class 8M, there are **27 pupils**.

There are **twice as many boys** as girls.

Number of boys	Number of girls
.....	.....

In class 8K, there are **28 pupils**.

There are **two more boys** than girls.

Number of boys	Number of girls
.....	.....

In class 8T, there are **9 boys**.

The ratio of boys to girls is **1 : 2**

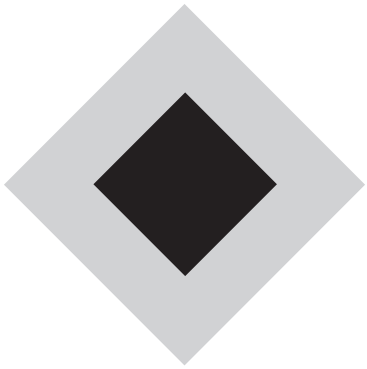
Number of boys	Number of girls
.....	.....

[3 marks]

14

[Extra]

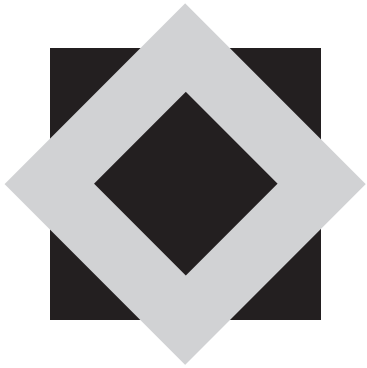
In this design, the ratio of **grey to black** is **3 : 1**



What **percentage** of the design is **black**?

_____ %

In this design, **60%** is **grey** and the rest is black.



What is the ratio of **grey to black**?

Write your ratio in its simplest form.

_____ : _____

[2 marks]

15

[Extra]

Paul is 14 years old.

His sister is exactly **6 years younger**, so this year she is 8 years old.

This year, the ratio of Paul's age to his sister's age is 14 : 8

14 : 8 written as simply as possible is **7 : 4**

When Paul is **21**, what will be the ratio of Paul's age to his sister's age?

Write the ratio as simply as possible.

..... : .....

When his sister is **36**, what will be the ratio of Paul's age to his sister's age?

Write the ratio as simply as possible.

..... : .....

Could the ratio of their ages ever be **7 : 7**?

Tick (✓) Yes or No.

Yes ☐ No ☐

Explain how you know.

[3 marks]

16

[Extra]

Teresa buys **two** packets of sweets.

In the first packet there are **three** strawberry sweets for every **five** lemon sweets.

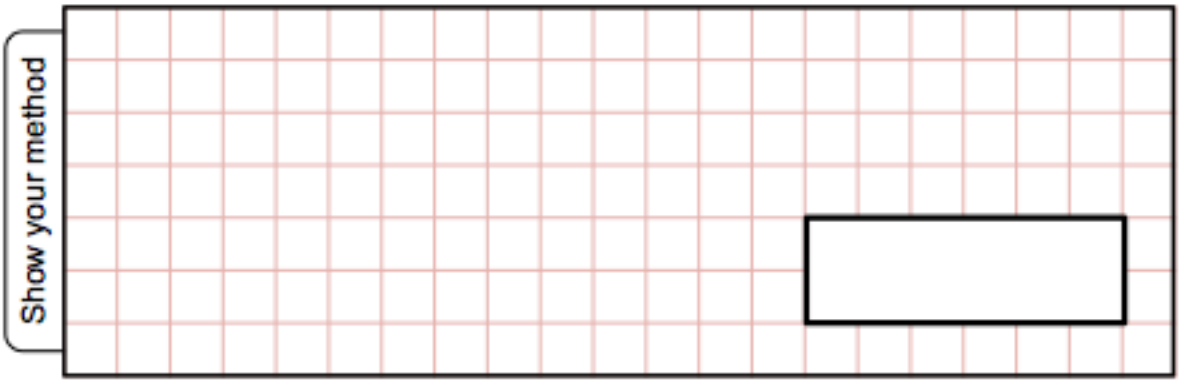
In the second packet there are **three** strawberry sweets for every **two** lemon sweets.

Each packet contains the same number of sweets.

The first packet contains 15 strawberry sweets.

How many strawberry sweets are there in the second packet?

Show your method



[2 marks]

17

[2002]

Two numbers are in the **ratio 3 : 2**

One of the numbers is **0.6**

There are two possible answers for the other number.

What are the two possible answers?

[2 marks]

18

[Extra]

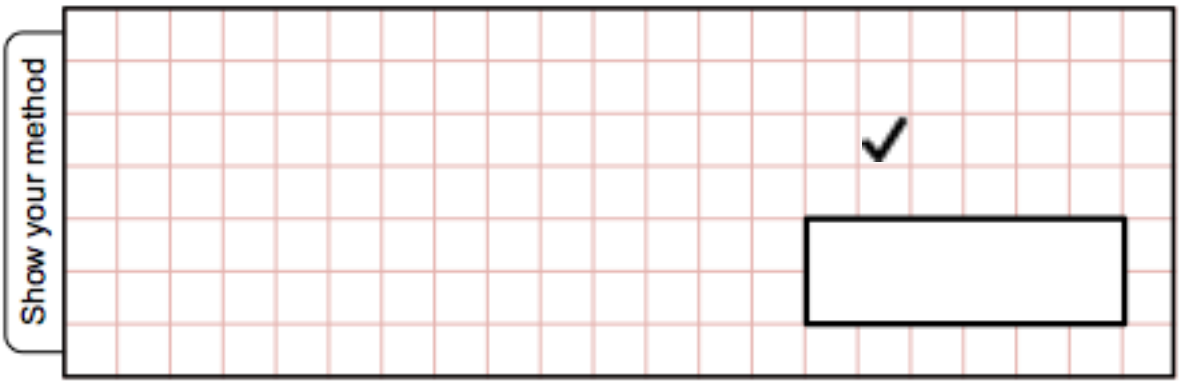
Susan mixes red and blue paint to make purple paint.

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

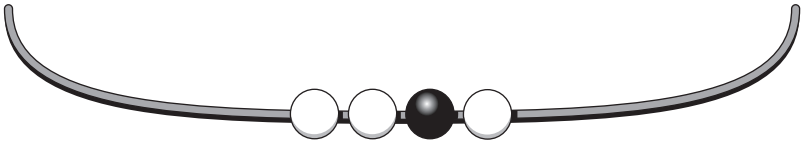


[2 marks]

19

[Extra]

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



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

_____ black beads

[1 mark]