SMILE WORKCARDS

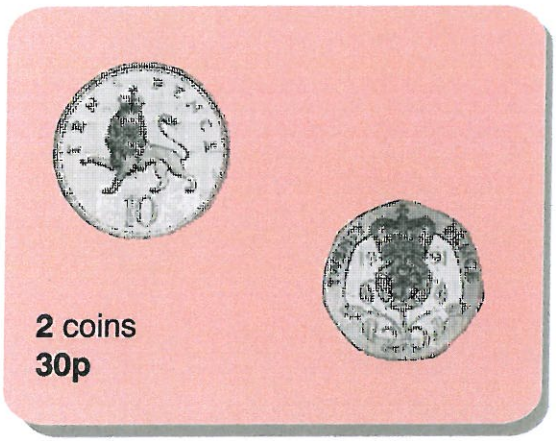
Ratio Pack One

Contents

Twice as many

Both of these sets of coins contain the **same** amount of money.
They both contain **35** pence.
One set contains **twice** as many coins as the other.

1. Here **30p** has been made using **2** coins.



Show how you can make **30p** using **4** coins.

2. Here **14p** has been made using **3** coins.

Show how you can make **14p** using **6** coins.

3. Here **71p** has been made using **3** coins.

Show how you can make **71p** using **6** coins.

4. Here **6p** has been made using **4** coins.

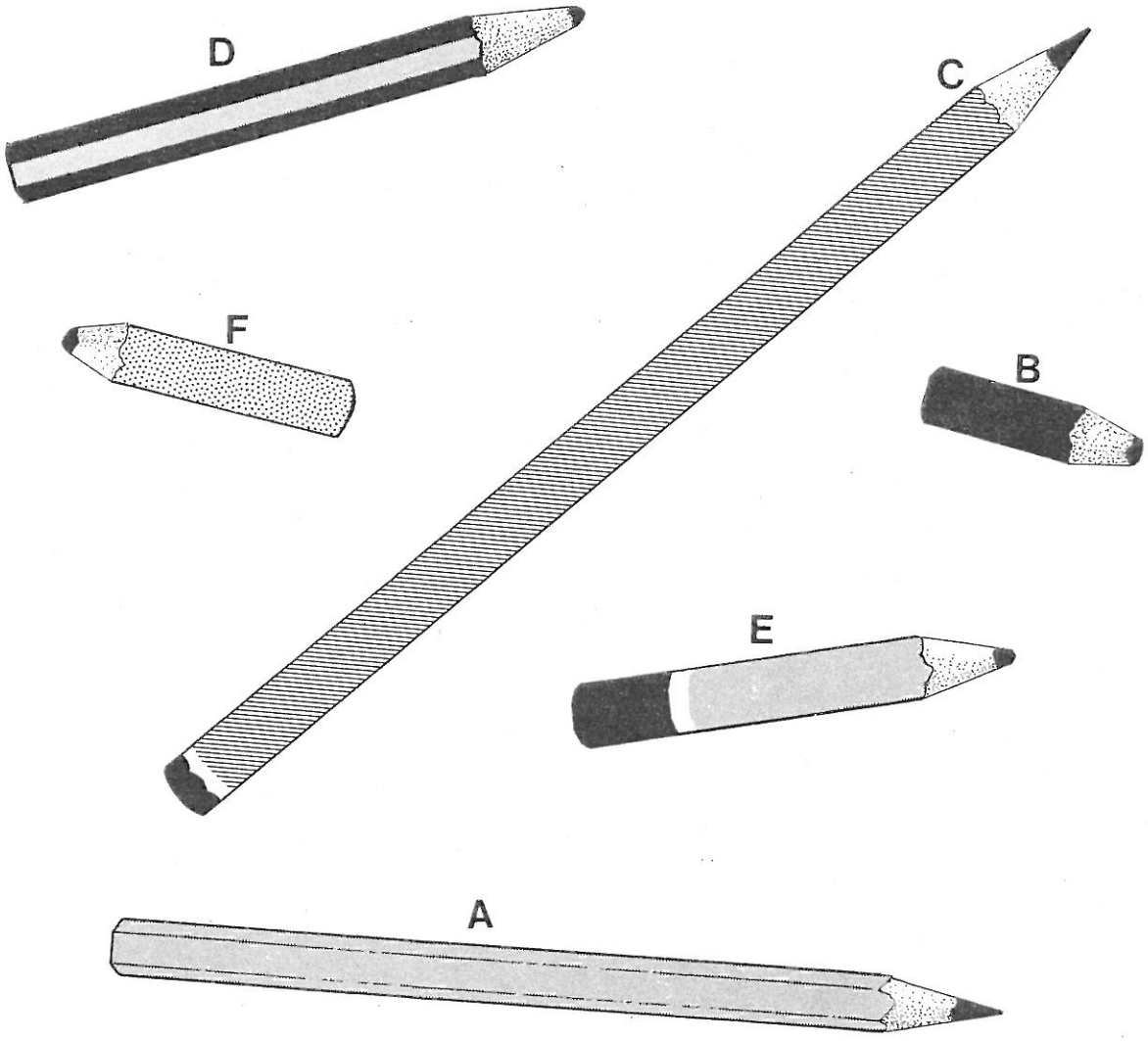
Can you make **6p** using **8** coins?

Turn over

5. Find an amount of money that can be made in two ways so that one set of coins contains twice as many coins as the other set.

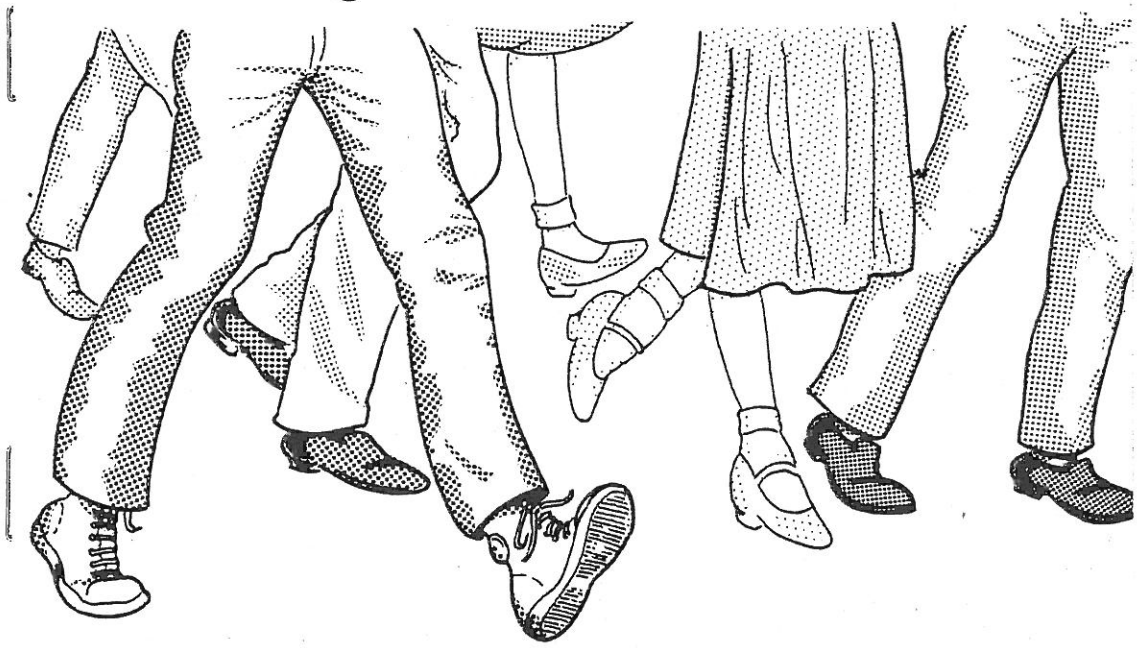
6. Find other amounts that can be made in two different ways.

Pencils



1. Latifa's pencil is 4cm long. *Which is Latifa's pencil?*
2. Chris' pencil is twice as long as Latifa's. *Which pencil belongs to Chris?*
3. Kate's pencil is three times as long as Latifa's. *Which pencil is Kate's?*
4. Sean's pencil is half as long as Kate's. *Which pencil belongs to Sean?*
5. Whose pencil is half the length of Chris'?
6. Kim's is the shortest pencil. *Which one is Abdul's?*
7. Write about Kim's pencil.
8. Now write about Abdul's pencil.

Walking to School



"A lives twice as far from school as B"

1. Who lives nearer to the school?

2. Do you know how far from the school A and B live?

3. Would it be correct to say "A's distance from school is twice B's distance"?

4. Would it be correct to say "The ratio of A's distance to B's distance is 2 to 1"?

5. If A and B both leave home at 8.00 a.m. and walk at the same speed, who will get to school first?

6. Last Thursday A and B left home at 8.00 a.m., but both arrived at 8.20 a.m.

Can you explain this?

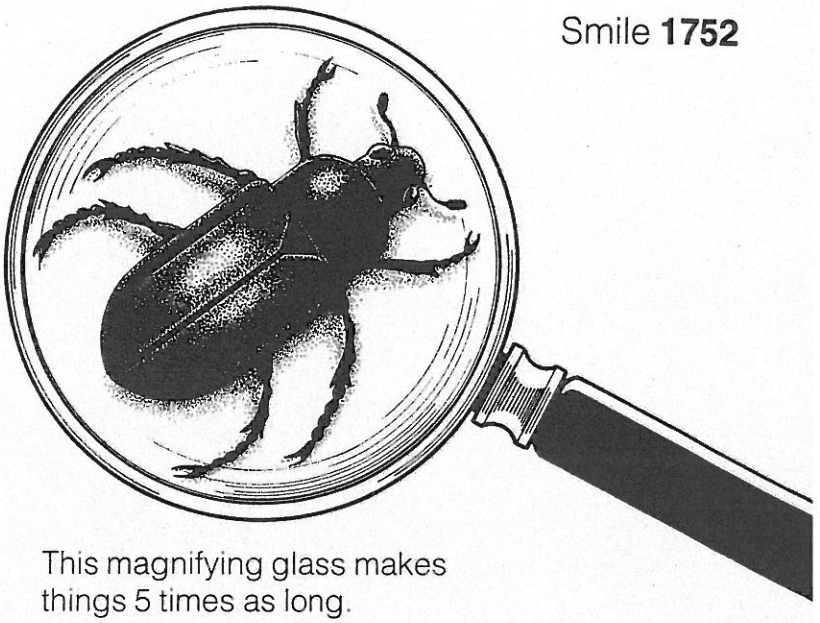
7. Paula lives 800m from school.
Steven lives 1500m from school.
Wayne lives 350m from school.
Ahmed lives 450m from school.
Lindsay lives 750m from school.
Tanya lives 1100m from school.
Robyn lives 200m from school.

Can you work out the names of A and B?

8. The ratio of C's distance to D's is 4 to 1.

Who are C and D?

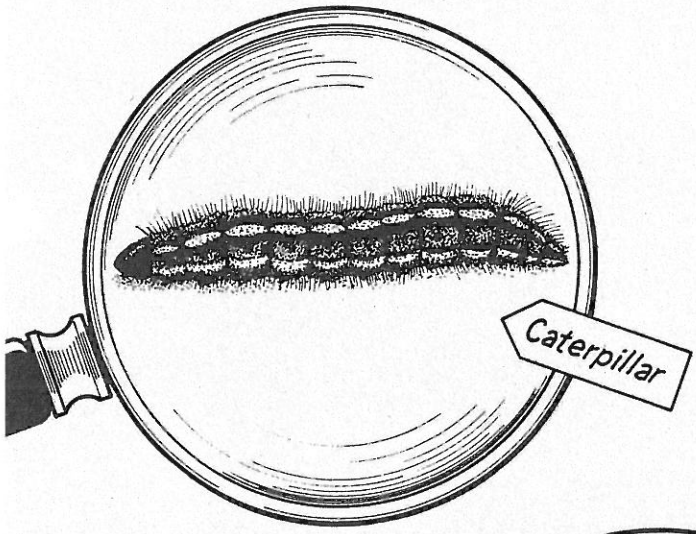
Under a magnifying glass

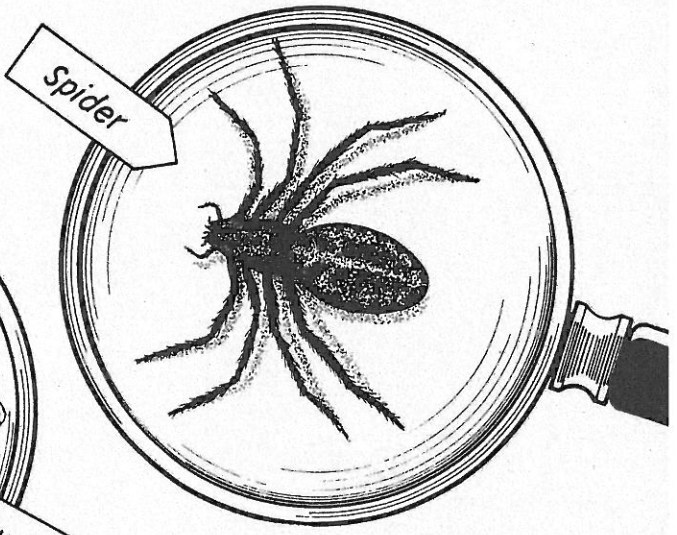


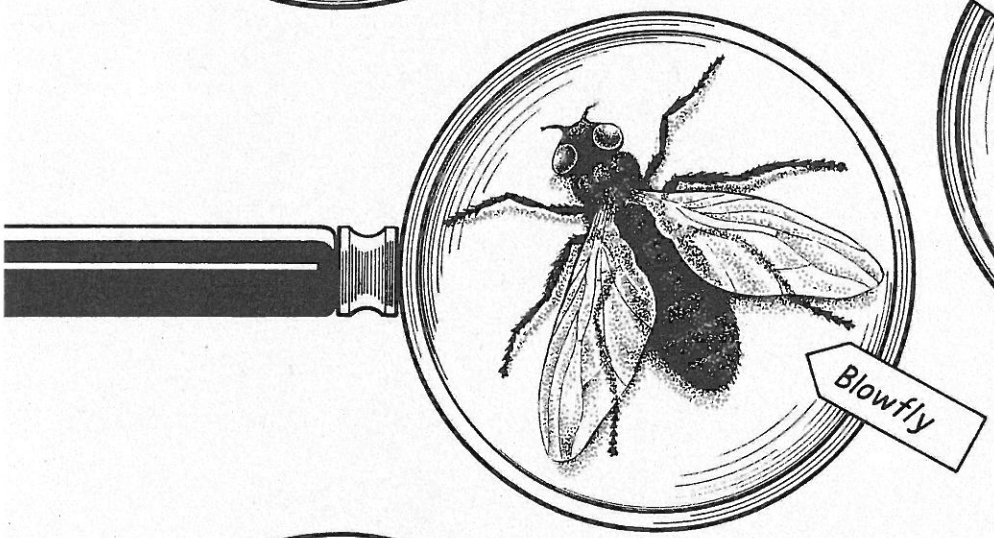
This magnifying glass makes things 5 times as long.

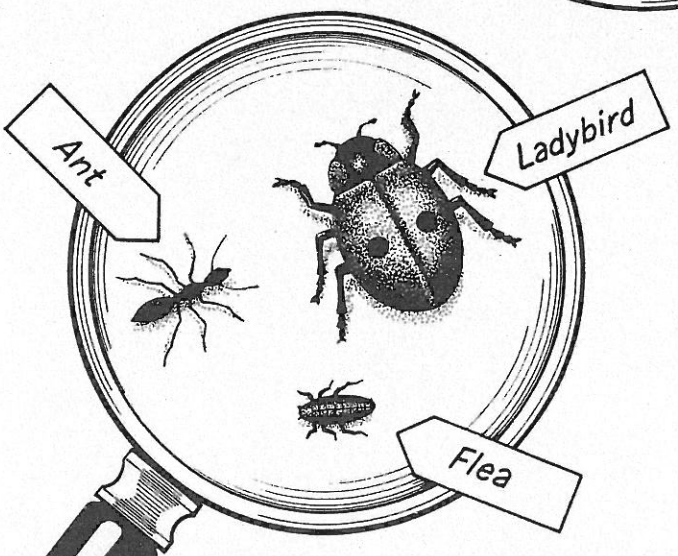
How long is the beetle really?

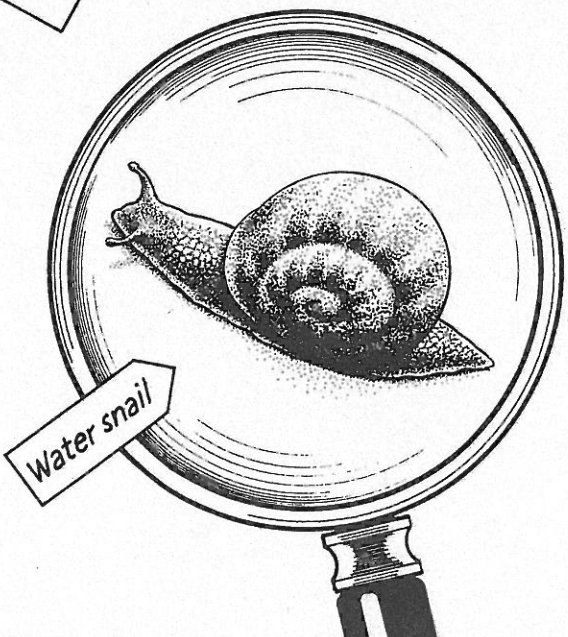
How long are the creatures below?



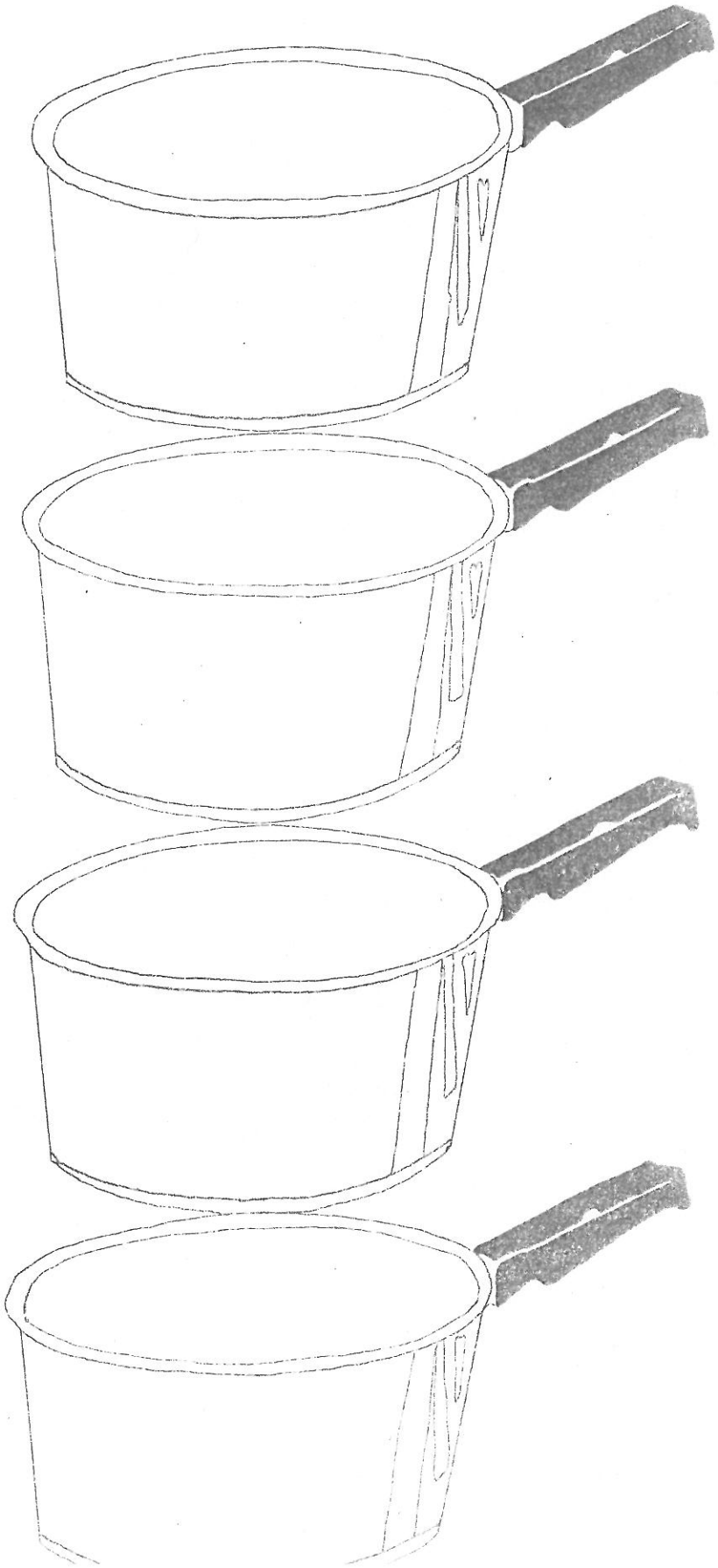








Cooking Numbers



Ms Jones, a domestic science teacher and a group of 7 children are making quiches.

Some of the children are members of large families and want to make a quiche for as many as 8 people. Others only want to make enough to serve two.

The problem is to know how much of the different ingredients to use . . .

Ann: HOW MUCH PASTRY DO I NEED?
Ms Jones: How many are you cooking for?
Ann: Just 2 — there's only mum and me.
Ms Jones: The recipe is for 4 people so you'll need to halve all the quantities. *Use 50g of pastry.*

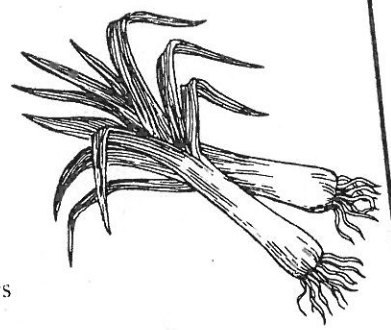
1) Write a full list for Ann giving the quantity of each ingredient she needs to use.

Tom: HOW MANY EGGS SHOULD I USE? I'M COOKING FOR 6.
Ms Jones: You'll need 1½ times what is on the recipe — thats half as much again. *Use 3 eggs.*

2) Write a list showing the quantity of each ingredient Tom must use.

Quiche of Bacon and Leeks

SERVES 4 TIME TAKEN: 1¼ HOURS



100 g shortcrust pastry

For the Filling

450g leeks
40g butter

salt
freshly milled pepper

100g lean bacon rashers
2 eggs
150 ml cream

Roll the pastry out to a circle slightly larger than an 8-inch (20-cm) quiche tin or flan ring set on a baking tray. Line the tin with the pastry, and trim the edges neatly. Set aside in a cool place while preparing the filling.

Trim away the base of the leeks and remove the outer damaged leaves. Cut the green leaves down to within 1 inch (2½cm) of the white part. Slit the leeks open and wash well under running cold water. Shred the leeks finely. Trim away the rinds and cut up the bacon rashers. Melt the butter in a frying pan and add the bacon. Stir for a moment and then add the shredded leeks. Season with salt and pepper, stir to mix and then cover with a lid. Lower the heat and saute very gently for about 20 minutes or until the leeks are quite soft, but not brown.

Draw the pan off the heat and spoon the leek and bacon mixture into the prepared pastry case. Leave behind any juices in the pan. Lightly mix the eggs and cream and pour over the leek and bacon mixture. Place above centre in a moderately hot oven (375°F, 190°C or Gas No.5) and bake for 40 minutes. Serve warm or cold with salad.

Later in the year Ms Jones decided to make the same quiche with another group of children.

To avoid all the same questions about the quantities of different ingredients, she made a table to give out to the children.

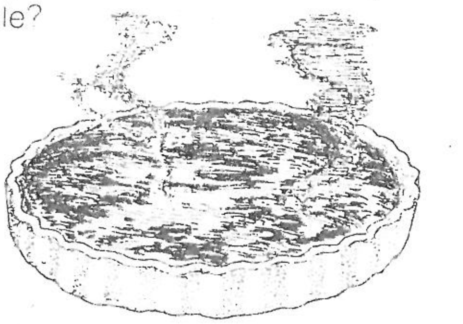
Number of People	Pastry	Leeks	Butter	Bacon	Eggs	Cream
1						
2	50g					
3						
4	100g	450g	40g	100g	2	150
5						
6					3	
7						

3) Copy and complete the table.
It will be easier if you start with the rows for 2 people (Ann's recipe) and 6 people (Tom's recipe).

4) There are problems in some rows of the table with the number of eggs and the amount of cream.
Explain how you solved these problems.

5) The time taken for the quiche for 4 people is given as 1¼ hours.

a) Should you allow 2½ hours for a quiche for 8 people?

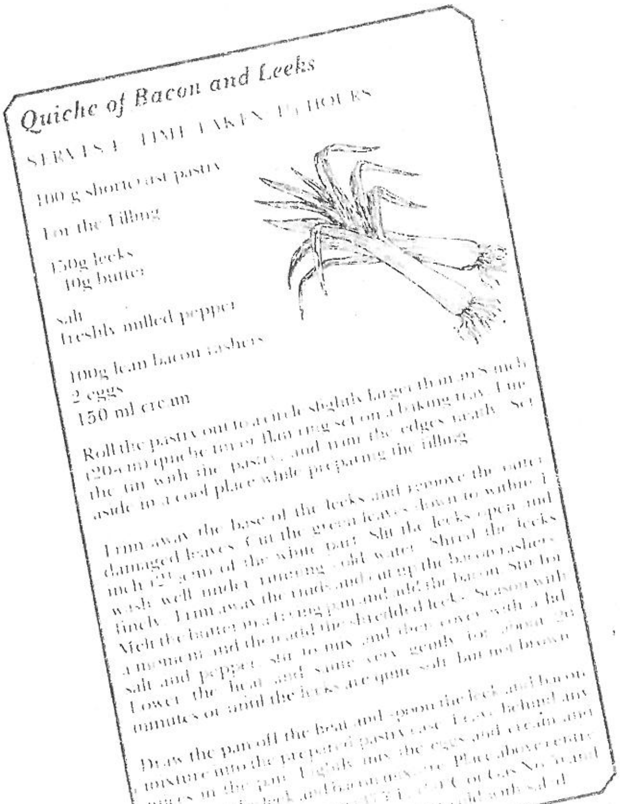


b) How long do you think you should allow?

c) At what temperature should you set the oven?

d) What size tin should you use?

Explain your answers.



Quiche of Bacon and Leeks

SERVES 4 TIME TAKEN 1¼ HOURS

100 g shortcrust pastry

For the Filling

150g leeks
10g butter

salt
freshly milled pepper

100g lean bacon rashers
2 eggs
150 ml cream

Roll the pastry out to a circle slightly larger than an 8 inch (20 cm) quiche tin or flan ring set on a baking tray. Line the tin with the pastry, and trim the edges neatly. Set aside in a cool place while preparing the filling.

Trim away the base of the leeks and remove the outer damaged leaves. Cut the green leaves down to within 1 inch ([illegible] cm) of the white part. Slit the leeks open and wash well under running cold water. Shred the leeks finely. Trim away the rinds and cut up the bacon rashers. Melt the butter in a frying pan and add the bacon. Stir for a moment and then add the shredded leeks. Season with salt and pepper. Stir to mix and then cover with a lid. Lower the heat and [illegible] very gently for about 20 minutes or until the leeks are quite soft but not brown.

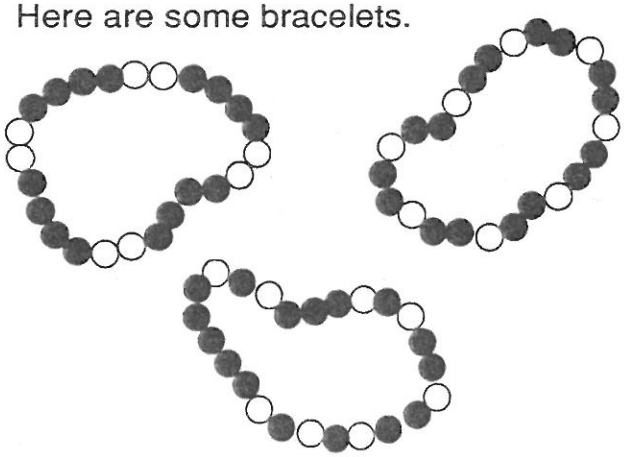
Draw the pan off the heat and spoon the leek and bacon mixture into the prepared pastry case. Leave behind any juices in the pan. Lightly mix the eggs and cream and pour over the leek and bacon mixture. Place above centre in a moderately hot oven [illegible] and bake for [illegible] minutes. Serve warm or cold with salad.

Introducing Ratio

You will need worksheet 2267a.

Ratio is the comparison between two or more values.

Here are some bracelets.



Each bracelet consists of **24** beads.

Each bracelet has **16 red** beads and **8 white** beads.

For each bracelet there are **16 red** beads and **8 white** beads.

The **ratio** of **red** beads to **white** beads is. . . **16:8**

The ratio of **red** beads to **white** beads expressed in the **simplest form** is . . . **2:1**

The ratio **16:8** is equivalent to the ratio **2:1** because for every **2 red** beads there is **1 white** bead.

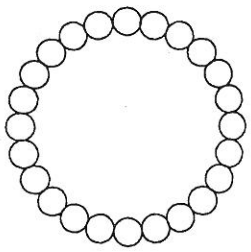
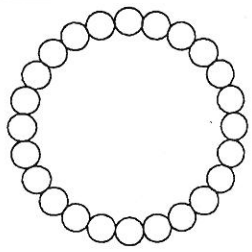
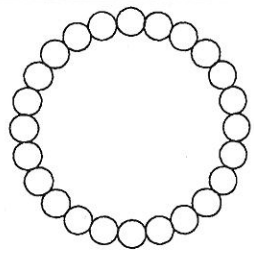
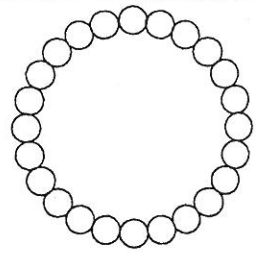
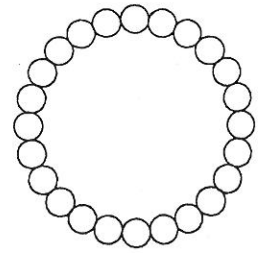
- Use worksheet **2267a**.

  Cut out the **descriptions**, **ratios** and **ratios in the simplest form**.

  Use this information to colour in the bracelets.

Introducing Ratio Worksheet

1. Cut out the **Description** **Ratio** **Ratio in its simplest form** and **Bracelet**
2. Match each **description** to a **ratio** and a **ratio in its simplest form**. *(There are 5 groups.)*
3. Colour a bracelet for each **description** to show the ratio of **red beads** to **white beads**.

Description	Ratio	Ratio in its simplest form	Bracelet
There are **8 red** beads and **16 white** beads.	The ratio of **red** beads to **white** beads is **6 : 18**	**red beads . white beads** **1 : 5**	
There are **6 red** beads and **18 white** beads.	The ratio of **red** beads to **white** beads is **8 : 16**	**red beads . white beads** **1 : 3**	
There are **4 red** beads and **20 white** beads.	The ratio of **red** beads to **white** beads is **18 : 6**	**red beads . white beads** **3 : 1**	
There are **21 red** beads and **3 white** beads.	The ratio of **red** beads to **white** beads is **4 : 20**	**red beads . white beads** **7 : 1**	
There are **18 red** beads and **6 white** beads.	The ratio of **red** beads to **white** beads is **21 : 3**	**red beads . white beads** **1 : 2**	

Comparing ratio

You will need worksheet 2336a

Ratio is the comparison between two or more numbers.

This is Janine's class.

Janine has written five statements to describe her class.

'In my class there are 25 pupils.'

'In my class there are 15 girls and 10 boys.'

'In my class there are 3 girls to every 2 boys.'

'The ratio of girls to boys is 15 : 10.'

'The ratio of girls to boys in its **simplest form** is 3 : 2.'

1. Explain why the ratio 15 : 10 is equivalent to the ratio 3 : 2.

2. Use the worksheet 2336a. Cut up the 25 pieces and sort them into 5 groups to find which statements describe each pupil's class. You will need to fill in some missing numbers. Stick them in your book.

3. The ratio of girls to boys in Gezlain's class is 3 : 5.
   a) Which of the following describes the class?
      16 pupils, 6 girls and 10 boys.
      20 pupils, 8 girls and 12 boys.
   b) Describe two other classes with a ratio 3 : 5.

4. Jasmine and Jason cook similar omelettes. Jasmine's omelette is for two people.

	No. of people	Eggs	Butter	Tomatoes	Mushrooms	Cheese
Jasmine	2	4	10g	■	■	■
Jason	■	■	25g	5	15	125g

   a) What is the ratio of quantities in its simplest form?
   b) Copy and complete the table and find out how many people Jason's omelette will feed.

Smile **2363**

Conversion Pack 1

An activity for 2 people

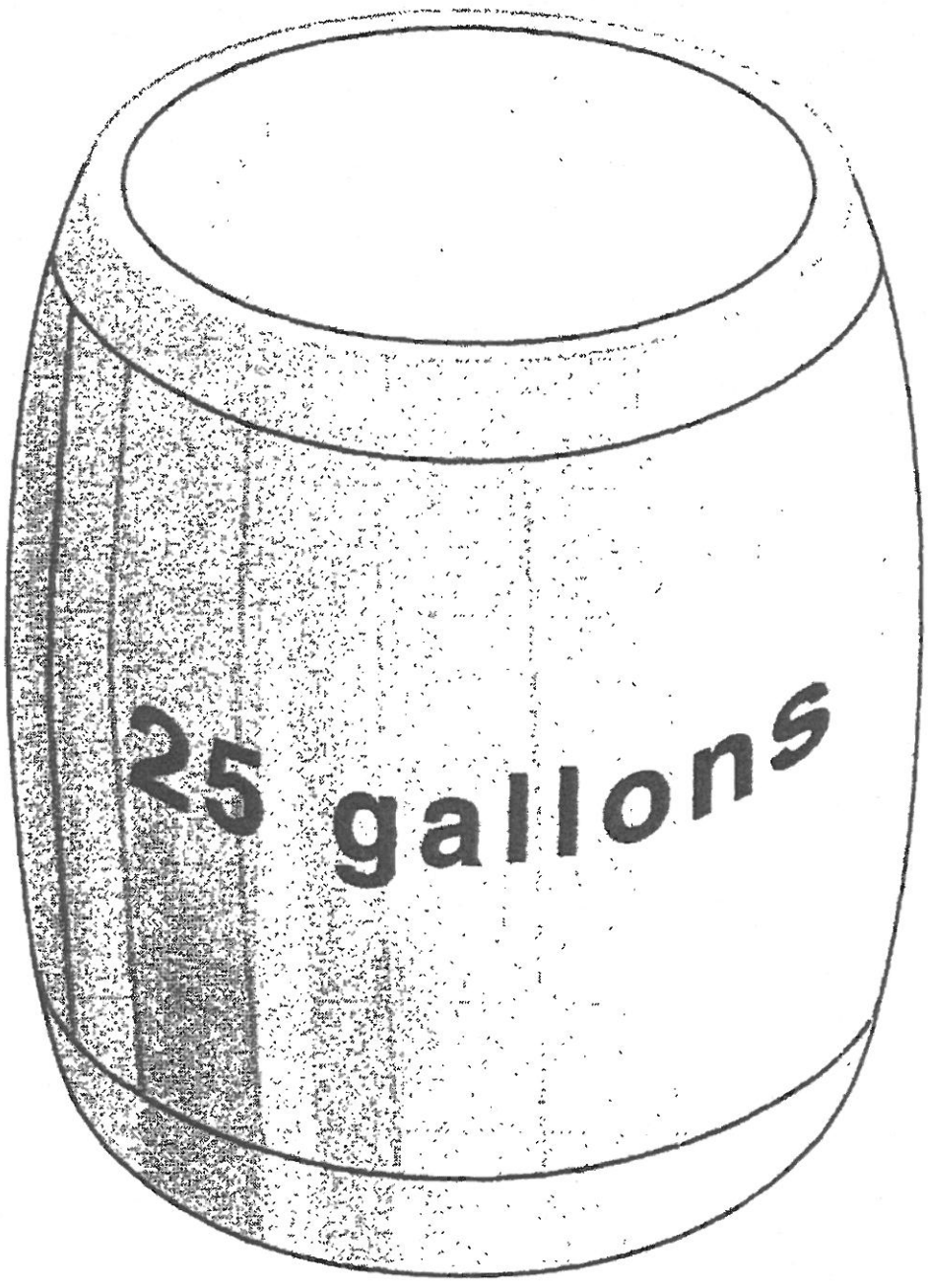
1. Complete the problems on cards A – F. You might find the conversion chart on the back of this envelope helpful.

2. Record your answers in your book. Show your working. Remember to include the units in your answers.

3. You need to know the conversions. Record them in your book and test each other on them.

A

Smile 2363



How many pints?

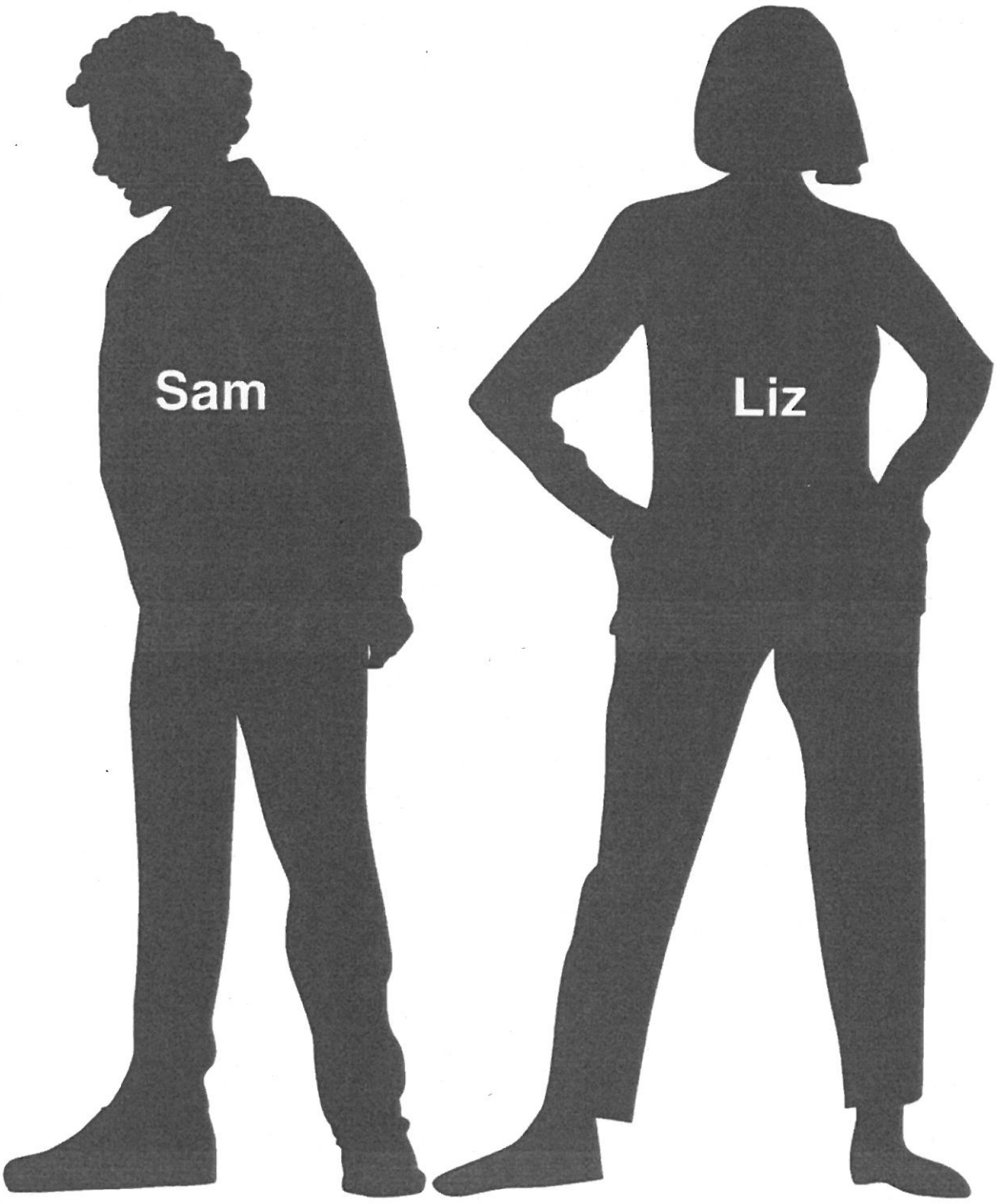
B

Match the pairs of cards.

a) 2km	1) 1350cm
b) 135cm	2) 0.265km
c) 26.5mm	3) 2000m
d) 13.5m	4) 1350mm
e) 265m	5) 2.65cm

C

Who is the heavier?

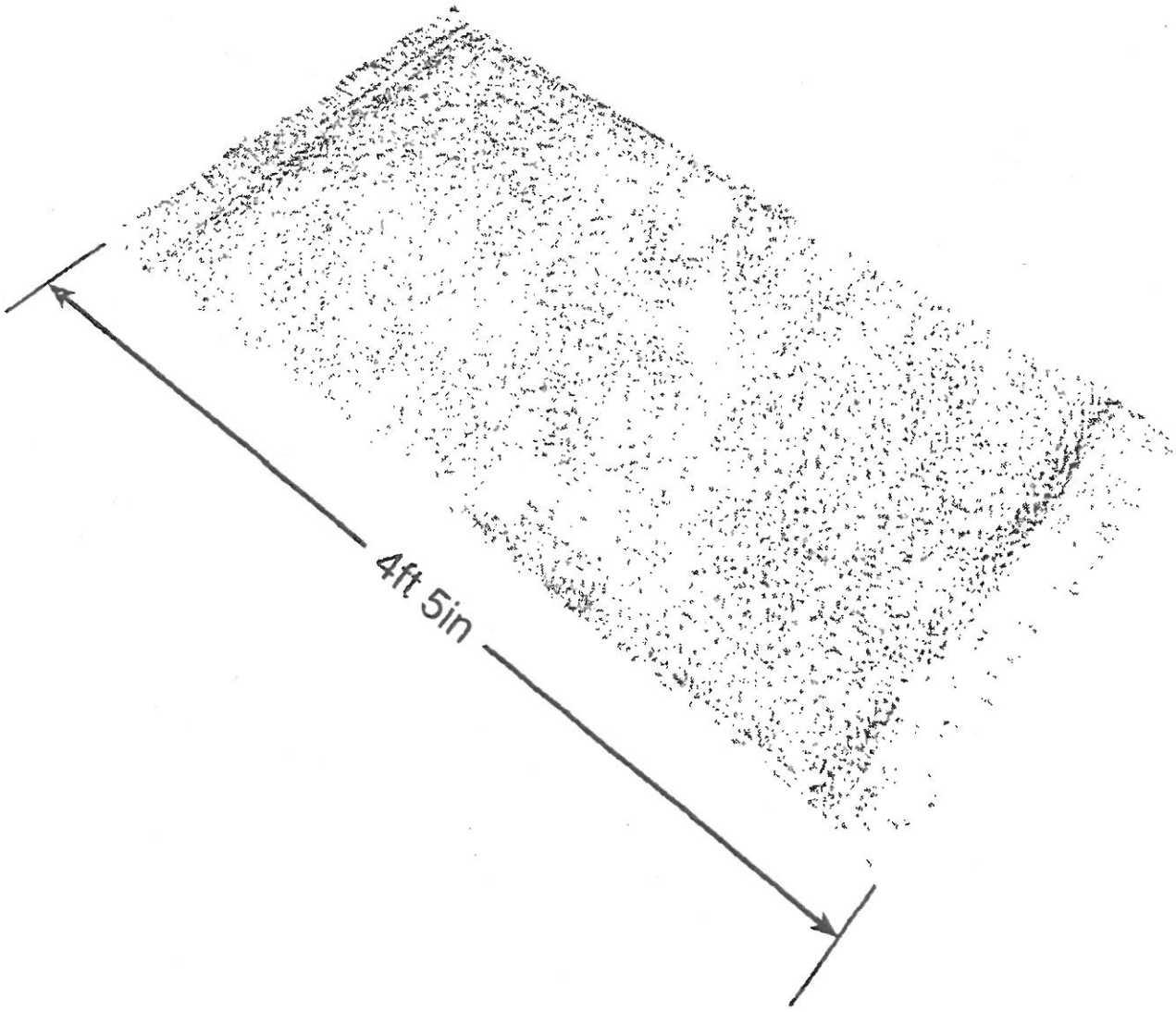


160lb

9 stone 7lb

A rug is 4 foot 5 inches long.

How many inches is this?

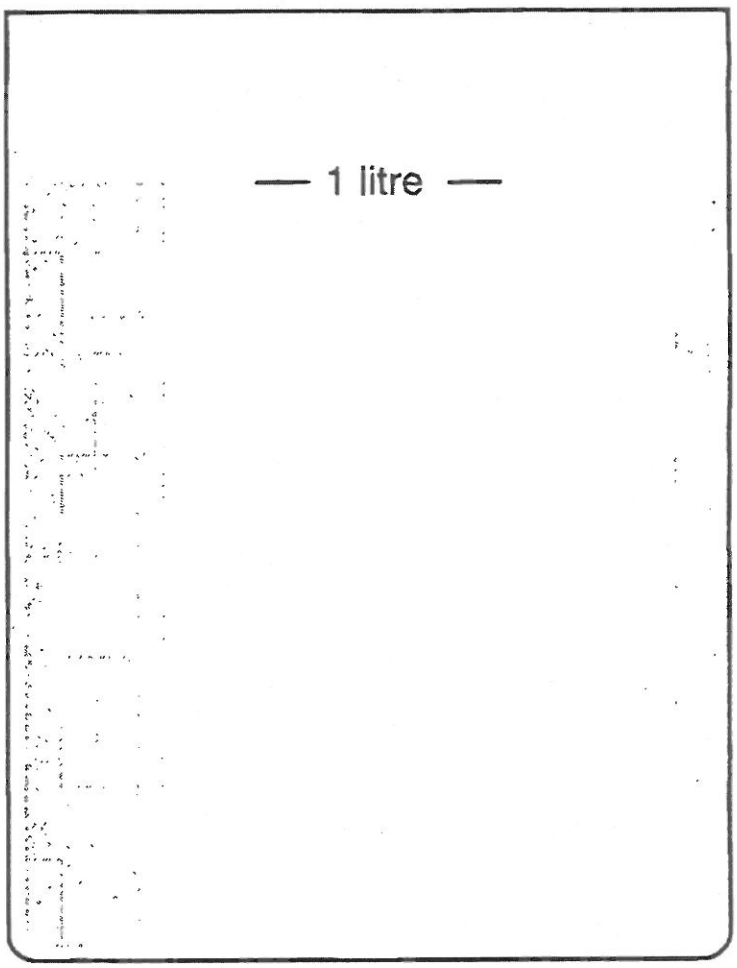


E

Two students are doing a science experiment.

They take 57ml

from a 1 litre measuring beaker.



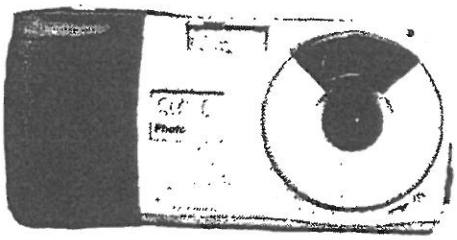
How much liquid is left in the beaker?

F

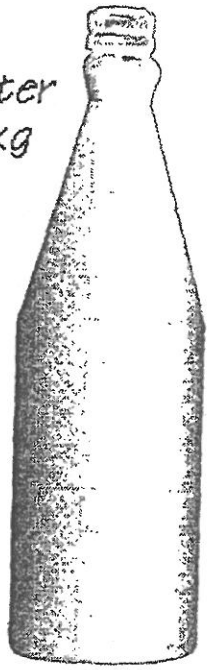
The hand baggage allowance on the flight to Kenya is 5kg.

Tim's bag contains:

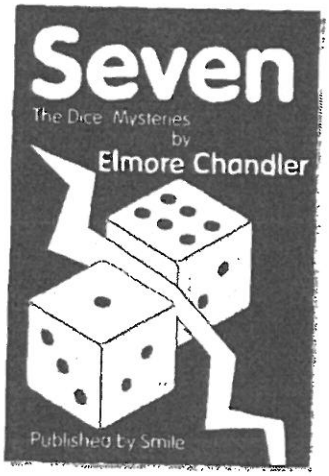
Camera
900g



Water
1.2kg

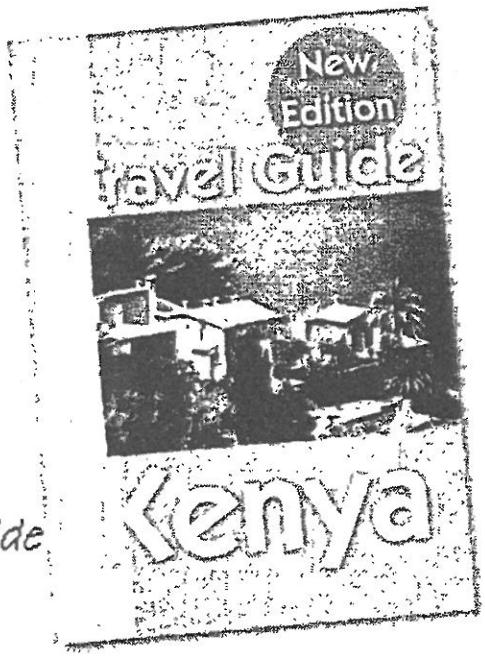


Book
350g



Crisps
75g

Wash bag
1.4kg



Travel Guide
600g

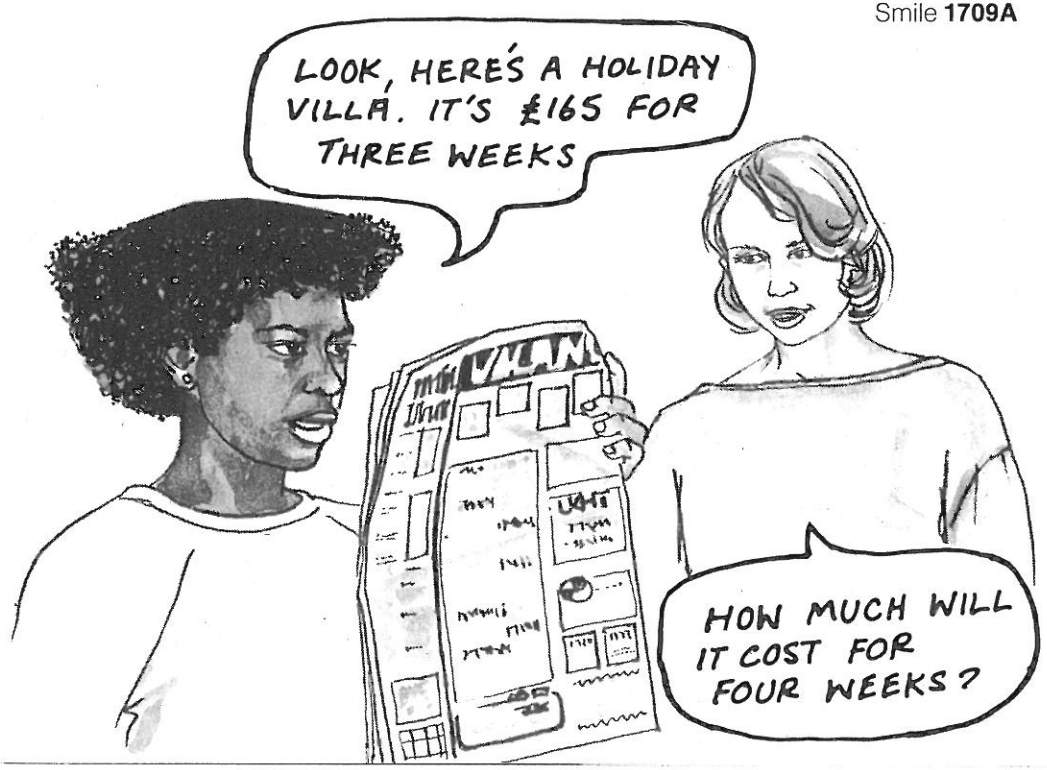
Is Tim's bag too heavy?

Ratio problems

There are 6 problems in this pack.

Smile **1709B**

Smile **1709A**



Smile **1709D**

Smile **1709C**

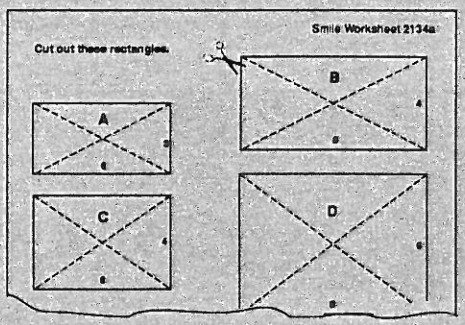

HOW MUCH PETROL DO I NEED TO GET TO GO TO SWINDON?
I DON'T KNOW BUT I USED ABOUT 18 LITRES TO EXETER, AND THAT'S 135 MILES. HOW FAR IS IT TO SWINDON?
75 MILES.


THIS PHONE CALL IS GOING TO COST A BOMB! WE'VE BEEN TALKING FOR 15 MINUTES - AND AT THIS TIME OF THE DAY YOU ONLY GET 45 SECONDS FOR 5p - SO THE BILL SO FAR IS...

You will need Worksheet **2134a**.

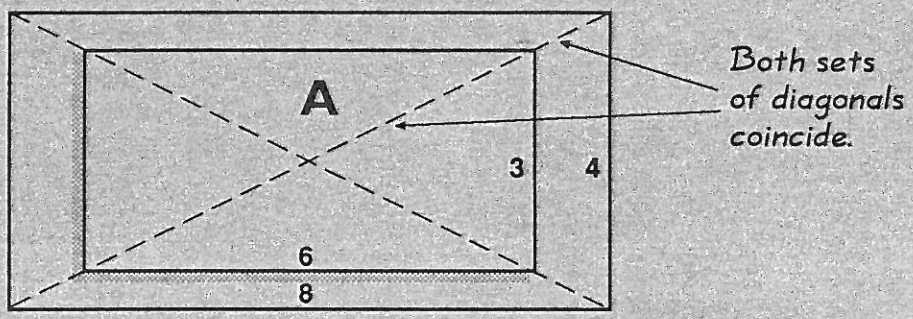
Similar Rectangles?

1. Cut out rectangle **A** and rectangle **B** from the worksheet.



Place rectangle **A** on top of rectangle **B**.

Look at the diagonals.



For both rectangles **A** and **B** the ratio of the **Long side : Short side** is **2 : 1.**

Rectangle	Long Side	Short side	Ratio Long side:Short side
A	6	3	6 : 3 = 2 : 1
B	8	4	8 : 4 = 2 : 1

Rectangles are similar if the ratio **Long side : Short side** is the same.

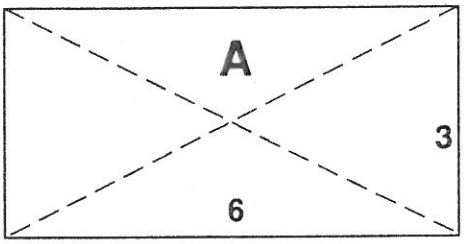
Rectangle **A** is **similar** to rectangle **B**.

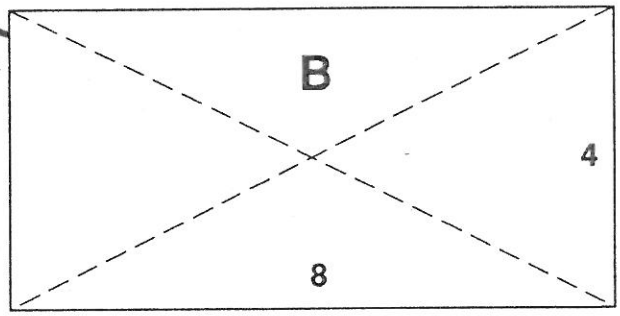
2. Cut out the other rectangles from the worksheet.
   Group them into 2 sets of **similar** rectangles.

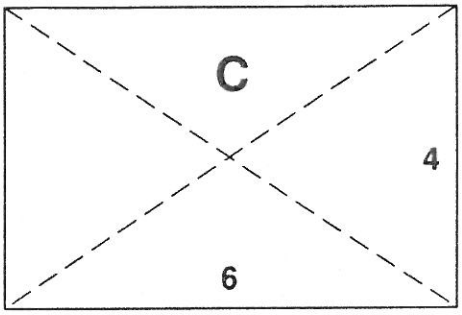
3. Make a table for both sets to show the ratio of the **Long side : Short side.**
   Check that they are similar rectangles.

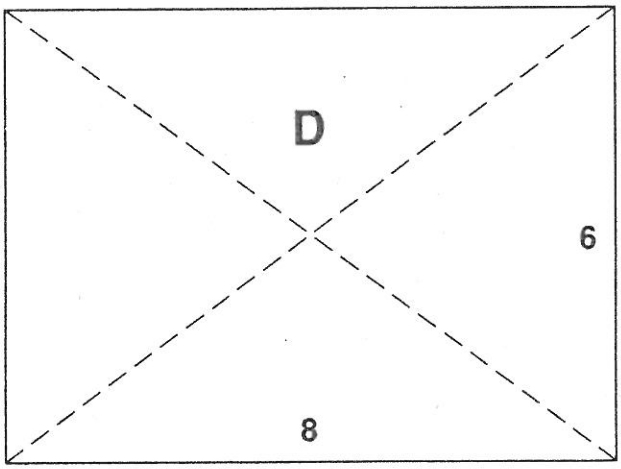
4. For each set draw another rectangle that is **similar**.
   Check that they are similar rectangles.

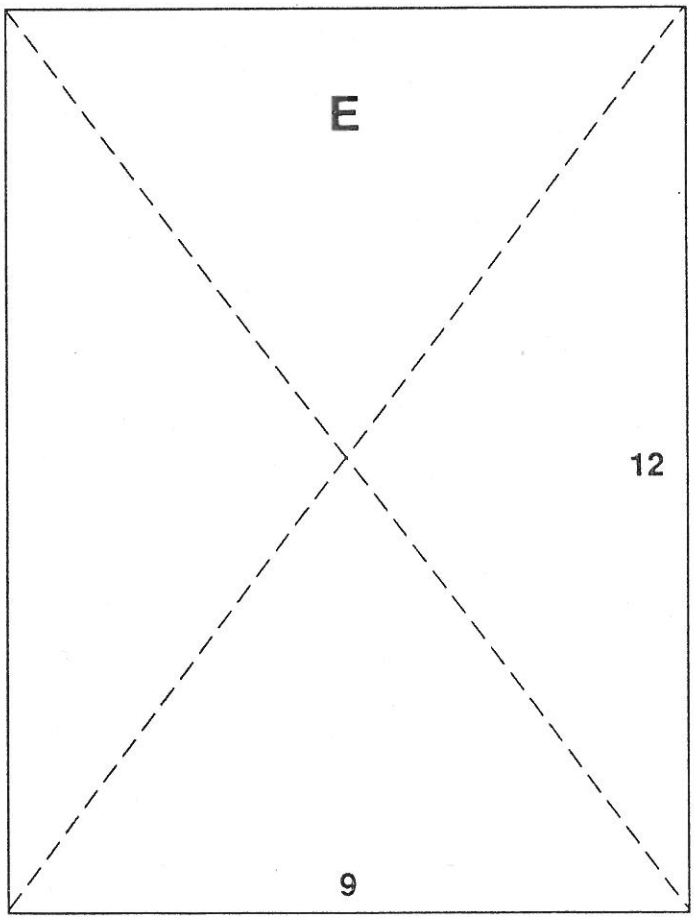
Cut out these rectangles.

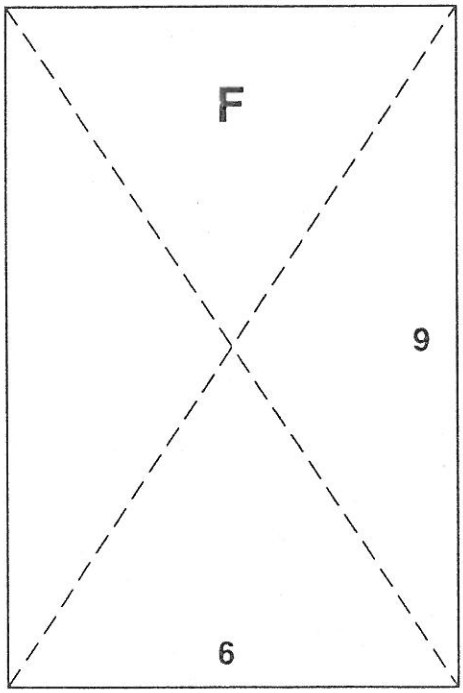


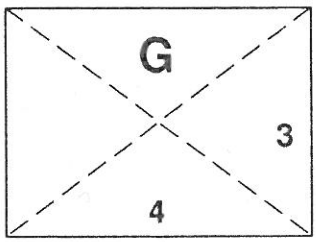


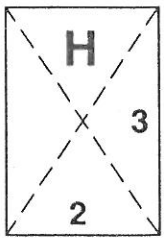


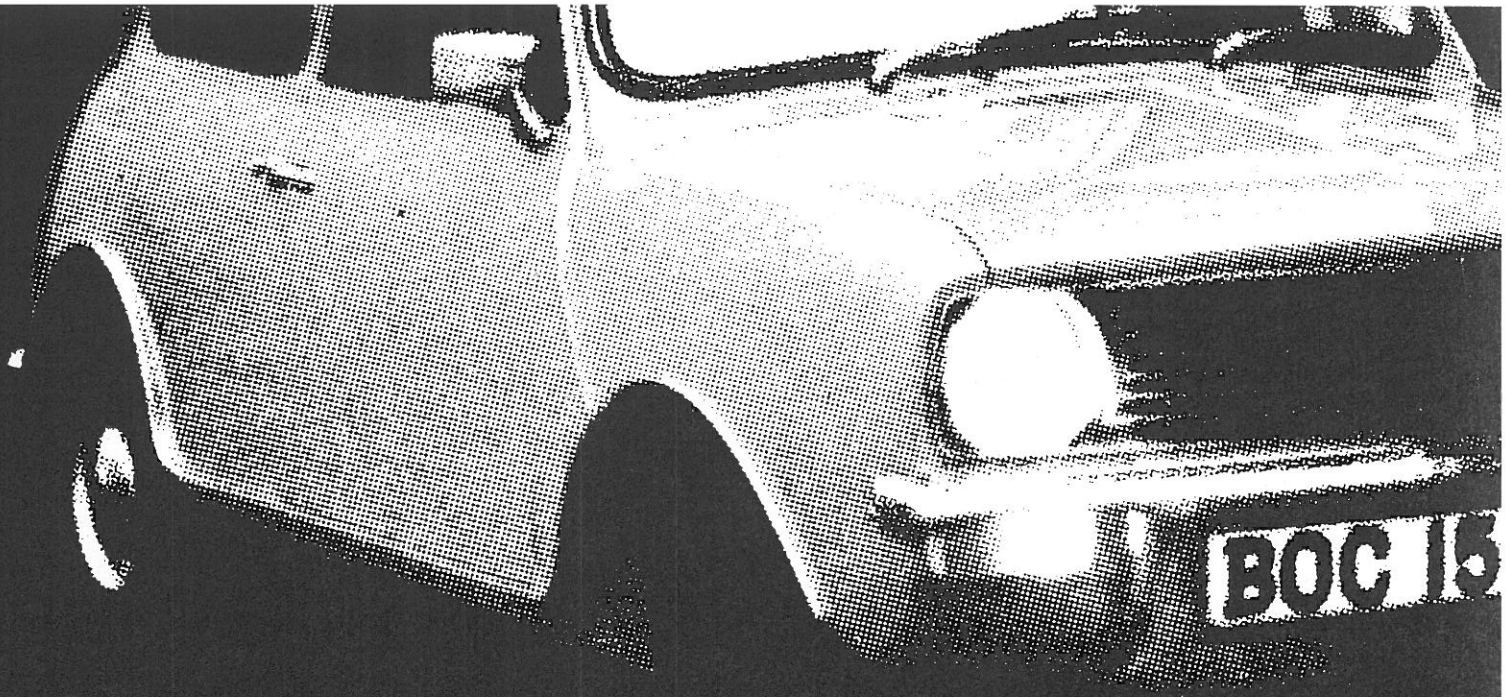












Car trial results

Four cars were tested for long distance journeys. The results of the trials are listed below.

Complete the tables:

Trial 1: BERWICK to STRANRAER

	Car A	Car B	Car C	Car D
Time in hours	6	12	4	■
Average speed (km/hr)	80	■	120	60

Trial 2: STRANRAER to EDINBURGH

	Car A	Car B	Car C	Car D
Time in hours	3	■	2	9
Average speed (km/hr)	80	40	■	■

Trial 3: EDINBURGH to LONDON

	Car A	Car B	Car C	Car D
Time in hours	9	■	12	15
Average speed (km/hr)	80	40	■	■

Trial 4: LONDON to HOLYHEAD

	Car A	Car B	Car C	Car D
Time in hours	7.2	14.4	■	9.6
Average speed (km/hr)	96	■	64	■