Maths Emporium Recipe Booklet



Introduction

Past papers aren't just for practising your mathematics skills – they also include a number of delicious recipes for you to try in your own homes. You can calculate the correct proportions to be used for any size of gathering, and they're all suitable for vegetarians. For those with an electronic version of this booklet, chef's comments can be found <u>here</u>.

Thanks are due to our examiners for coming up with all these mouth-watering confections which both Foundation tier and Higher tier students will enjoy while enhancing their understanding of ratio and proportion.

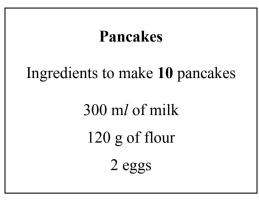
Information

The marks for individual recipes are shown in round brackets: e.g. (2). There are 17 recipes in this booklet. The total mark is **64**. Recipes marked with a * sign will require some explanation before serving.

Calculators must not be used for questions marked with a # sign, though Kenwood mixers can be used as and when they are required.

Advice

Show all stages in any calculations. Work steadily through the paper. Do not spend too long on one recipe. If you cannot answer a question, leave it and attempt the next one. Return at the end to those you have left out. 1. Here are the ingredients needed to make 10 pancakes.



Matthew makes 30 pancakes.

(a) Work out how much flour he uses.

360 g (2)

Tara makes some pancakes. She uses 750 m*l* of milk.

(b) Work out how many pancakes she makes.

25 pancakes (2)

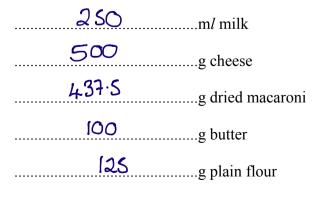
(Total for recipe 1 is 4 marks)

#2. This is a list of ingredients for making macaroni cheese for 4 people.

2 requi	Ingredients for 4 people	8 people 200ml
SOM	100m/ milk	acome
100g	200g cheese	400g
81.5	175g dried macaroni	350ml
209	40g butter	809
259	50g plain flour	1009

Work out the amount of each ingredient needed to make macaroni cheese for 10 people.

mulk = 50 + 200 = 250Cheese = 100 + 400 = 500gDred macaroni = 87.5 + 350 = 4.37.5Bulter = 20 + 80 = 100gFlow = 25 + 100= 125



(Total for recipe 2 is 3 marks)

3. Here is a list of ingredients for making a trifle for 4 people.

Г

<u>२.</u>	Trifle for 4 people
60g	120 g of raspberry jelly
4210	8 sponge fingers 420 ml of custard
90	180 g of tinned fruit

Rob is going to make a trifle for **6** people. Work out the amount of each ingredient he needs.

> Raspheny Jelly = 120+60=180 Sponge hages = 4+8 = 12 Custard = 420+210=630 Tirred mut = 90+180 = 270

180	g of raspberry jelly
12	sponge fingers
100	
	g of tinned fruit
	recipe 3 is 3 marks)



4. Here are the ingredients for making cheese pie for 6 people.

Cheese pie for 6 people
180 g flour 240 g cheese 80 g butter 4 eggs 160 m <i>l</i> milk

Bill makes a cheese pie for **3** people.

(a) Work out how much flour he needs.

$$\frac{1809}{2}$$
 flow = 6 people $2 \div 2$



Jenny makes a cheese pie for 15 people.

(b) Work out how much milk she needs.

(2)

(Total for recipe 4 is 4 marks)



#5. Here is a list of ingredients for making **10** Flapjacks.

5	Ingredients for 10 Flapjacks
40g	80 g rolled oats
<u>3</u> 69	60 g butter
15ml	30 ml golden syrup
89)	36 g light brown sugar

Work out the amount of each ingredient needed to make 15 Flapjacks.

Oats = 80 + 40 = 120 Buter = 60 + 30 = 90 Golden Syrup = 15 + 30 = 445 hightbrownsugar = 18 + 36 = 54



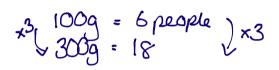


6. Here is a list of ingredients to make melon sorbet for 6 people.

Melon Sorbet for 6 people		
800 g $\frac{4}{1}$ $\frac{1}{2}$	melon egg whites lime	
100 g	caster sugar	

Terry makes melon sorbet for 18 people.

(a) Work out how much caster sugar he uses.



<u>300 g</u> g

Hedley makes melon sorbet. He uses 2 limes.

(b) Work out how many people he makes melon sorbet for.

24 (2)

(Total for recipe 6 is 4 marks)

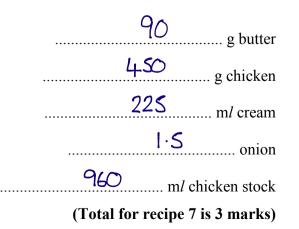
#7. This is a list of ingredients for making chicken soup for 4 people.

2	Ingredients for 4 people		
80g	60 g	butter	
150g	300 g	chicken	
75ml	150 m <i>l</i>	cream	
1/2	1	onion	
320ml	640 m <i>l</i>	chicken stock	

Bill is going to make chicken soup for 6 people.

Work out the amount of each ingredient he needs.

Butter -> 60g+30g = 90g Chicken-> 300g+150g = 450g Gream -> 150ml+75ml = 225ml Onion -> 1 + 2 = 1.5 oniois Chickenstock -> 640+320ml = 960ml



#8. Here are the ingredients needed to make 8 pancakes.

Pancakes		
Ingredients to make 8 pancakes		
300 m <i>l</i> milk 1 egg 120 g flour 5 g butter		

Jacob makes 24 pancakes. $8 \times 3 = 24$

(a) Work out how much milk he needs.

*3(300ml -> 8 parcakes) ×3 900ml = 24 parcakes) ×3



Cathie makes 12 pancakes.

(b) Work out how much flour she needs.

120g Alour = 8 pancakes 60g Alow = 41 pancakes 180g = 12 pancakes

الات) g (2)

(Total for recipe 8 is 4 marks)



9. Here is a list of ingredients for making small cakes.

Small cakes		
400 g flour		
200 g butter		
200 g sugar		
2 eggs		
Makes 15 small cakes		

Rosie has

2 kg of flour 2000g
800 g of butter
1.5 kg of sugar 1500g
12 eggs

What is the greatest number of small cakes Rosie can make? You must show all your working.

 $Aour. J000 \div 400 = 5batones$ $5 \times 15 = 75$
cakes $Butter. 800 \div 200 = 4batches$ $4 \times 15 \div 60$ cakes $Sugar 1500 \div 200 = 7 \cdot 5 batches$ $7 \cdot 5 \times 15 = 112 \cdot 5$ cakes
or 112 cakes $Eggs 12 \div 2 = 6 batches$ $6 \times 15 = 90$ cakes.

LOcakes.

(Total for recipe 9 is 4 marks)

***10.** Here are the ingredients to make 12 cupcakes.

For 12 cupcakes
200 g butter
200 g caster sugar
4 eggs
240 g flour

Martin is making cupcakes to sell at his school play. Martin wants to make 1 cupcake for each adult and 2 cupcakes for each child.

There will be 90 children and 120 adults at the school play.

Martin can get these ingredients from the school kitchen.

5 kg butter 5 kg caster sugar 90 eggs 5 kg flour

Make a shopping list of any ingredients Martin still needs, showing the amount of each ingredient. You must show all your working.

Nomber of cakes 120 adults 9 Ochildren ×2 хI 120 + 180 300 cakes Number of batches of cakes 300 ÷ 12 = 25 batches Ingredients Butter 25x 200g = 5000g = 5kg Casterargar 25×200 = 5000g = 5kg Eggs 4×25 = 100 eggs BUT THERE AREONLY 90 eggs so Martin needs 10 eggs Flour 25x240 = 6000g = 6kg BUTTHERE ISONLY SKG SO Martin Oggs and Ikg Aow alsoneeds 1 kg (Total for recipe 10 is 5 marks)

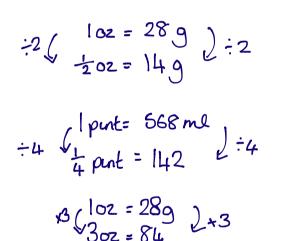
#11. Here is a list of ingredients for making a cheese Soufflé.

one

Cheese Soufflé		
3 eggs		
1 oz butter		
$\frac{1}{2}$ oz flour		
$\frac{1}{4}$ pint milk		
3 oz grated cheese		

Imperial Units	Ν	Aetric Units
1 oz	=	28 g
1 pint	=	568 m <i>l</i>

(a) Complete the list of ingredients using metric units.



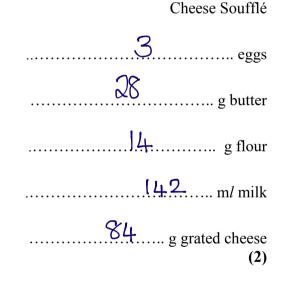
Jemma wants to make 12 Cheese Soufflés.

(b) Work out how much milk she will need.

Give your answer in litres.

$$\frac{1}{4} \text{ put} = 1 \text{ souffle} \\ \times 12$$

3 puts. = 12



1•704 litres (2)

(Total for recipe 11 is 4 marks)

#12. Here are the ingredients needed to make 16 gingerbread men.

г

8	Ingredients to make 16 gingerbread men		
909	180 g flour		
నిర్మి	40 g ginger		
నక్తు	110 g butter		
1 కర్ర	30 g sugar		

Hamish wants to make **24** gingerbread men. Work out how much of each of the ingredients he needs.

flow -> 180+90 =270g Guger -> 20+40 = 60g Butter -> 55+110 = 165g Sugar -> 15+30=45g

g flour	270
g ginger	60
g butter	[65
g sugar	45
8 8	

(Total for recipe 12 is 3 marks)

13. Here is a list of ingredients for making fruit buns.

Fruit	buns
Flour 30 Butter 15 Sugar 15 Mixed fr Eggs 1	50 g

Makes 12 fruit buns

Rosie has

3 kg of flour **30009** 900 g of butter 1 kg of sugar **10009** 800 g of mixed fruit 12 eggs

What is the greatest number of fruit buns Rosie can make?

You must show your working.

Flour 3000: 300 = 10 batches	0x 2 = 20 buns
Butter 900 ÷ 150 = 6 batores	6 x 12 = 72 bons
Super 1000 ÷ 150 = 6.6 batores	$6.6 \times 12 = 80$ buns
fruit 800 ÷ 100 = 8 batches	$8 \times 12 = 96 \text{ buns}$
Eggs 12:1=12batches	$12 \times 12 = 144 \text{ burs}$

72 buns

(Total for recipe 13 is 4 marks)







*14. Here are the ingredients needed to make 20 cookies.

Ingredients to make 20 cookies 225 g of butter 120 g of caster sugar 275 g of flour		Cookies
120 g of caster sugar	Ing	gredients to make 20 cookies
	120	g of caster sugar

Liz is going to make some cookies for a party.	000Hs	chuldren 14	
There will be 4 adults and 14 children at the party.	×2	xS	= 50.
Liz wants to make 2 cookies for each adult and 3 cookies for	each child.	42	cookies
Liz has			
500 g of butter			

300 g of caster sugar

1 kg of flour

Does Liz have enough butter, enough caster sugar and enough flour to make all the cookies for the party?

You must show all your working.

(Total for recipe 14 is 5 marks)

15. Here are the ingredients needed to make 12 shortcakes.

Shortcakes				
Makes 12 shortcakes				
200 g 200 g	of sugar of butter of flour of milk			

Liz makes some shortcakes. She uses 25 ml of milk.

(a) How many shortcakes does Liz make?

25 10ml = 12 cakes 2×2.5



Robert has 500 g of sugar 1000 g of butter 1000 g of flour 500 m*l* of milk

(b) Work out the greatest number of shortcakes Robert can make.

Sugar $500 \div 50 = 10$ botches $10 \times 12 = 120$ calues Butter $1000 \div 200 = 5$ botches $5 \times 12 = 60$ A the most he Flar $1000 \div 200 = 5$ botches $5 \times 12 = 60$ A the most he Can make Mulk $500 \div 10 = 50$ botches $50 \times 12 = 600$

.....

(2)

(Total for recipe 15 is 4 marks)

60

*16. Here is a list of ingredients for making 18 mince pies.

Ingredients for 18 mince pies

- 225 g of butter350 g of flour100 g of sugar280 g of mincemeat
 - 1 egg

Elaine wants to make 45 mince pies. $45 \div 18 = 2.5$

Elaine has

- 1 kg of butter 10000
- 1 kg of flour 10000

500 g of sugar

600 g of mincemeat

6 eggs

Does Elaine have enough of each ingredient to make 45 mince pies? You must show clearly how you got your answer.

NEEDS HAS Botter 225×2·5 = 562·59 1000g

 Flour. $350 \times 2.5 = 8759$ 10009

 Sugar 100 \times 2.5 = 2509
 5009

 Munamed 280 × 2.5 = 700g 600g × ops 1x2.5 = 2.5eggs 6

Elaine desnot have enough mincement

(Total for recipe 16 is 4 marks)

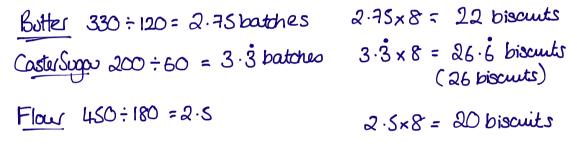
#17. Here are the ingredients needed to make **8** shortbread biscuits.

Shortbread biscuits makes **8** biscuits 120 g butter 60 g caster sugar 180 g flour

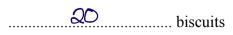
Tariq is going to make some shortbread biscuits. He has the following ingredients

330 g butter200 g caster sugar450 g flour

Work out the greatest number of shortbread biscuits that Tariq can make with his ingredients. You must show all your working.



The greatest number he can make 15 20



(Total for recipe 17 is 3 marks)

TOTAL = 64 MARKS