

# Edexcel GCSE

## Mathematics (Linear) – 1MA0

# PROPORTION

### Materials required for examination

Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.  
Tracing paper may be used.

### Items included with question papers

Nil



### Instructions

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Use black ink or ball-point pen.

Fill in the boxes at the top of this page with your name, centre number and candidate number.

Answer all questions.

Answer the questions in the spaces provided – there may be more space than you need.

Calculators may be used.

### Information

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The marks for each question are shown in brackets – use this as a guide as to how much time to spend on each question.

Questions labelled with an asterisk (\*) are ones where the quality of your written communication will be assessed – you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.

### Advice

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Read each question carefully before you start to answer it.

Keep an eye on the time.

Try to answer every question.

Check your answers if you have time at the end.

1. Here is a list of ingredients for making 10 Flapjacks.

Ingredients for 10 Flapjacks
80 g rolled oats
60 g butter
30 ml golden syrup
36 g light brown sugar

5 Flapjacks  
40 g  
30 g  
15 ml  
18 g

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

$\times 1.5$

.....120..... g rolled oats  
.....90..... g butter  
.....45..... ml golden syrup  
.....54..... g light brown sugar

(Total 3 marks)

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2. Fred has a recipe for 30 biscuits.

Here is a list of ingredients for 30 biscuits.

Self-raising flour : 230g  
 Butter : 150g  
 Caster sugar : 100g  
 Eggs : 2

15 biscuits

115  
 75  
 50  
 1

Fred wants to make 45 biscuits.

(a) Complete his new list of ingredients for 45 biscuits.

Self-raising flour : ..... 345 g .....  
 Butter : ..... 225 g .....  
 Caster sugar : ..... 150 g .....  
 Eggs : ..... 3 .....  
 (3)

Gill has only 1 kilogram of self-raising flour. She has plenty of the other ingredients.

(b) Work out the maximum number of biscuits that Gill could bake.

~~230 g = 30 biscuits  
 $\frac{230}{30} g = 1$  biscuits  
 $7\frac{2}{3} g = 1$  biscuit.~~

$\frac{230g}{23} = 30$  biscuits  
 $\frac{100g}{23} = \frac{30}{23}$  biscuits  
 $\frac{1000g}{23} = \frac{3000}{23}$  biscuits

$23 \overline{) 3000.000}$   
 0130.4...

..... 130 .....  
 (3)

(6 marks)

3. Here are the ingredients needed to make 16 gingerbread men.

Ingredients to make 16 gingerbread men	
180 g	flour
40 g	ginger
110 g	butter
30 g	sugar

8  
90  
20  
55  
15

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

.....270.....g flour  
.....60.....g ginger  
.....165.....g butter  
.....45.....g sugar

(3 marks)

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

<b>Shortcakes</b> Makes 12 shortcakes 50 g of sugar 200 g of butter 200 g of flour 10 ml of milk
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Liz makes some shortcakes.  
She uses 25 ml of milk.

- (a) How many shortcakes does Liz make?

$$\frac{25}{10} = 2.5 \quad 12 \times 2.5$$

30

(2)

Robert has 500 g of sugar  
1000 g of butter  
1000 g of flour  
500 ml of milk

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

$$\begin{aligned} \text{Sugar: } & \frac{500}{50} \times 12 = 120 \\ \text{Butter: } & 5 \frac{1000}{200} \times 12 = 60 \\ \text{Flour: } & = 60 \\ \text{Milk: } & \frac{500}{10} \times 12 = 600 \end{aligned}$$

60

(2)

(4 marks)

5. Here is a list of ingredients for making 12 small cakes.

Ingredients for 12 small cakes
180 g margarine
180 g sugar
200 g plain flour
1 teaspoon baking powder
2 eggs

Joe is going to make 24 of the small cakes.

(a) Work out how much margarine he needs.

(2)

$$\times 2$$

$$\underline{\quad 360 \quad} \text{ g}$$

Sharon is going to make 18 of the small cakes.

(b) Work out how much flour she needs.

(2)

$$200 + 100$$

$$\underline{\quad 300 \quad} \text{ g}$$

(Total for Question 4 = 4 marks)

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\*6. This is a list of ingredients for making a pear & almond crumble for 4 people.

Ingredients for 4 people:	4 people	2 people
80 g plain flour	80	40
60 g ground almonds	30 60	30
90 g soft brown sugar	45 90	45
60 g butter	60	30
4 ripe pears	4	2

Jessica wants to make a pear & almond crumble for 10 people.

Here is a list of the amount of each ingredient Jessica has in her cupboard.

250 g plain flour  
100 g ground almonds  
200g soft brown sugar  
150 g butter  
8 ripe pears

Work out which ingredients Jessica needs to buy more of.  
You must show all of your working.

She Needs

Flour: 200g ✓  
Almonds: 150g (50g)  
Sugar: 225g (25g)  
Butter: 150g ✓  
Pears: 10 (2)

She needs to buy : 50g Almonds  
: 25g Sugar  
: 2 pears.

(4 marks)

\*7. 225 grams of flour are needed to make 9 cakes.

Marian wants to make 20 of these cakes.  
She has 475 grams of flour.

Does Marian have enough flour to make 20 cakes?  
You must show all your working.

$$225g = 9 \text{ cakes}$$

$$25g = 1 \text{ cake}$$

$$500g = 20 \text{ cakes}$$

Marian does not have enough flour. She  
needs <sup>another</sup> 25g.

(3 marks)

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