Chhetri Academy

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GCSE MATHS

Ratio, proportion and rates of change

Edexcel 1MA1 | Subtopic collection Topic 36

Converting units

Higher tier

Past paper question booklet

29	2009-2024	Higher
question groups	available papers	tier

Before you begin

1. Show working and use units where appropriate.
2. Use extra paper if you need more space.
3. Print at actual size (100%) for measurement questions.

Name _____ **Date** _____

Whole questions are retained for context; some parts cover other points. Legacy sources are labelled.

1. Tania went to Italy.
She changed £325 into euros (€).

The exchange rate was £1 = €1.68

(a) Change £325 into euros (€).

€ .....
(2)

When she came home she changed €117 into pounds.

The new exchange rate was £1 = €1.50

(b) Change €117 into pounds.

£ .....
(2)

(Total 4 marks)

Q1

3. In August 2008, Eddie hired a car in Italy.

The cost of hiring the car was £620
The exchange rate was £1 = €1.25

(a) Work out the cost of hiring the car in euros (€).

€ .....
(2)

Eddie bought some perfume in Italy.

The cost of the perfume in Italy was €50
The cost of the same perfume in London was £42

The exchange rate was still £1 = €1.25

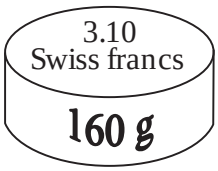
(b) Work out the difference between the cost of the perfume in Italy and the cost of the perfume in London.
Give your answer in pounds (£).

£ .....
(3)

(Total 5 marks)

Q3

***5** Margaret is in Switzerland.
The local supermarket sells boxes of Reblochon cheese.



Each box of Reblochon cheese costs 3.10 Swiss francs.
It weighs 160 g.

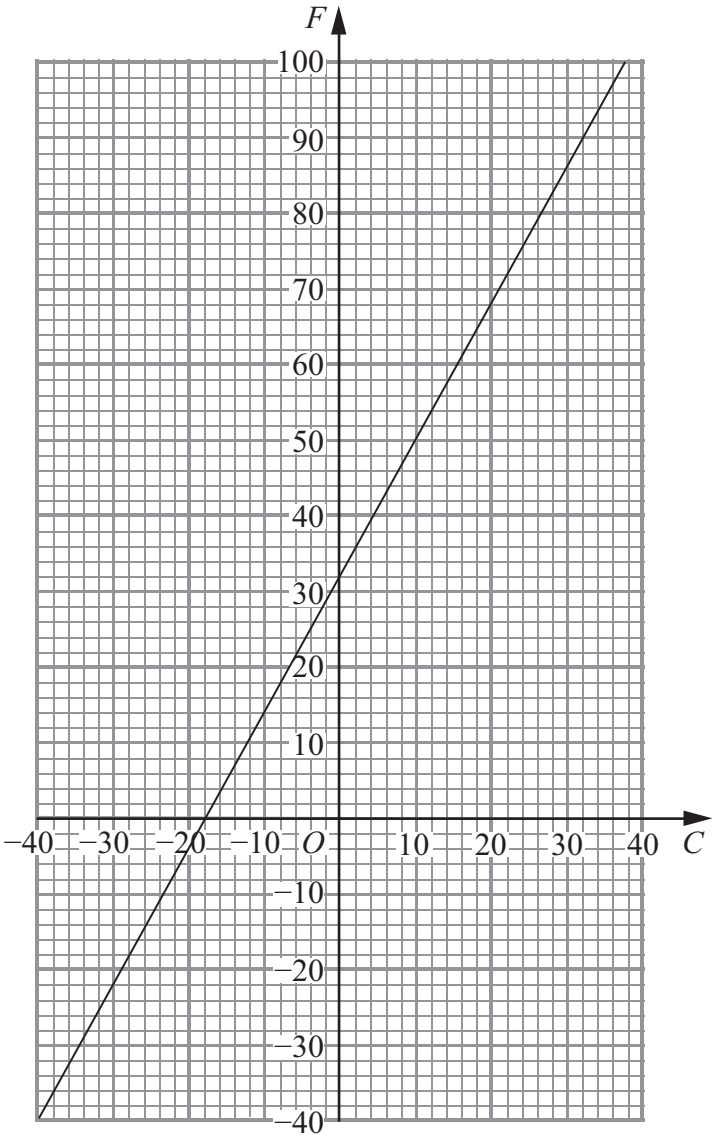
In England, a box of Reblochon cheese costs £13.55 per kg.

The exchange rate is £1 = 1.65 Swiss francs.

Work out whether Reblochon cheese is better value for money in Switzerland or in England.

(Total for Question 5 is 4 marks)

9 This graph can be used to convert between degrees Celsius (C) and degrees Fahrenheit (F).



Find the values of m and k such that

$$F = mC + k$$

$m =$ .....

$k =$ .....

(Total for Question 9 is 3 marks)

9. The exchange rate in London is £1 = €1.14
The exchange rate in Paris is €1 = £0.86

Elaine wants to change some pounds into euros.

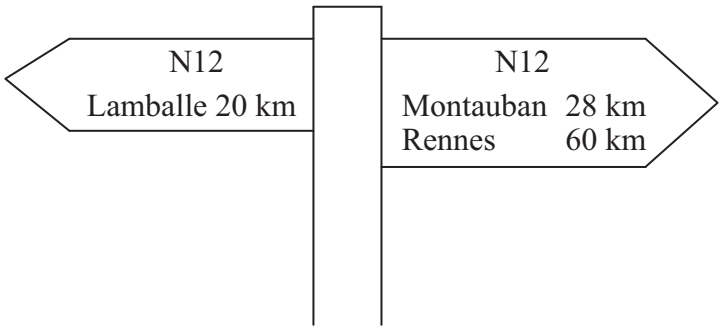
In which of these cities would Elaine get the most euros?
You must show all of your working.

.....

Q9

(Total 3 marks)

7 Caroline is driving her car in France.
She sees this road sign.



Caroline is going to Rennes on the N12
She stops driving 10 miles from the road sign.

Work out how much further Caroline has to drive to get to Rennes.

.....

(Total for Question 7 is 3 marks)

9 Linda is going on holiday to the Czech Republic.
She needs to change some money into koruna.

She can only change her money into 100 koruna notes.

Linda only wants to change up to £200 into koruna.
She wants as many 100 koruna notes as possible.

The exchange rate is £1 = 25.82 koruna.

How many 100 koruna notes should she get?

.....

(Total for Question 9 is 3 marks)

2 Stacey went to the theatre in Paris.

Her theatre ticket cost €96
The exchange rate was £1 = €1.20

(a) Work out the cost of her theatre ticket in pounds (£).

£ .....

(2)

Stacey bought a handbag in Paris.

The handbag cost €64.80
In Manchester, the same type of handbag costs £52.50

The exchange rate was £1 = €1.20

*(b) Compare the cost of the handbag in Paris with the cost of the handbag in Manchester.

(3)

(Total for Question 2 is 5 marks)

19 Rob is learning about the planets.

Rob makes a model of the Sun.
He also makes a model of the planet Jupiter.

Rob is going to hang the two models in the school hall.

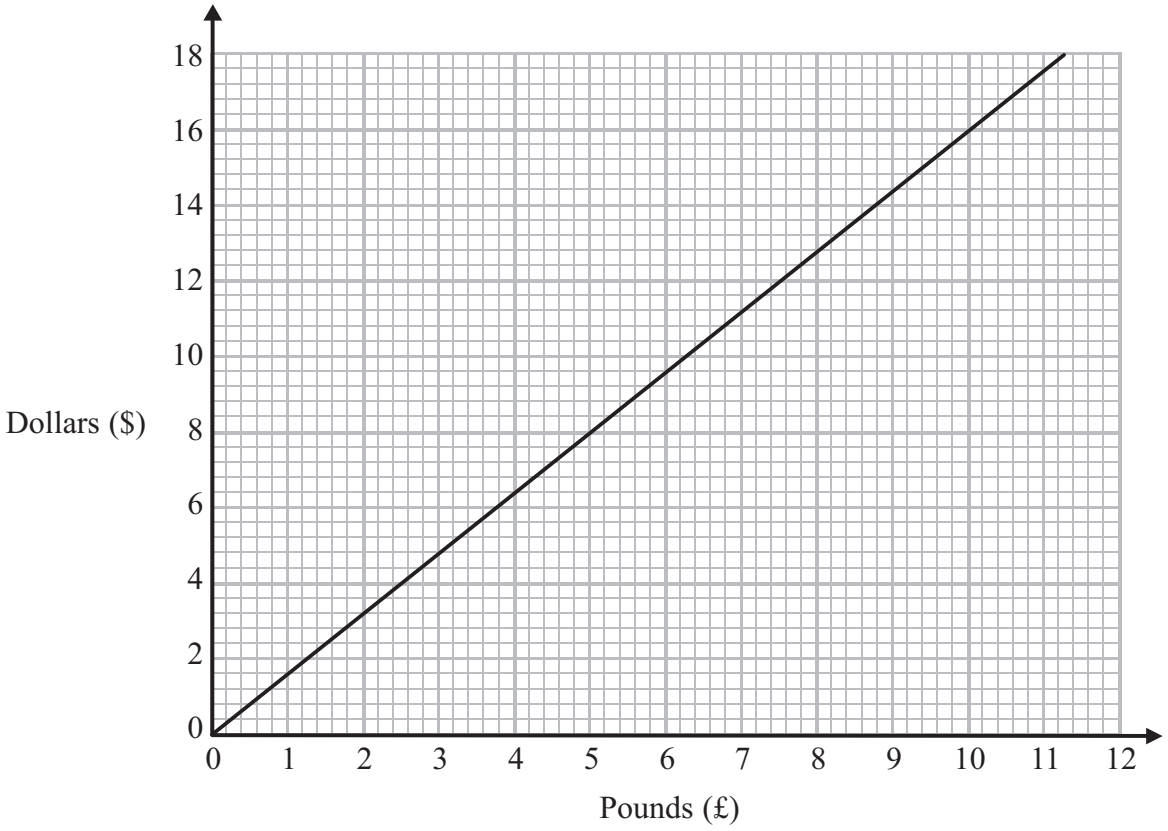
Rob wants a distance of 16 m between the two models.
The real distance between the planet Jupiter and the Sun is 8×10^8 km.

Work out the scale Rob should use.
Give your answer in the form $1 : n$

.....

(Total for Question 19 is 3 marks)

6 You can use this conversion graph to change between pounds (£) and dollars ($).



(a) Use the conversion graph to change £5 to dollars.

$ .....

(1)

Ella has $200 and £800
Her hotel bill is $600

Ella pays the bill with the $200 and some of the pounds.

(b) Use the conversion graph to work out how many pounds she has left.

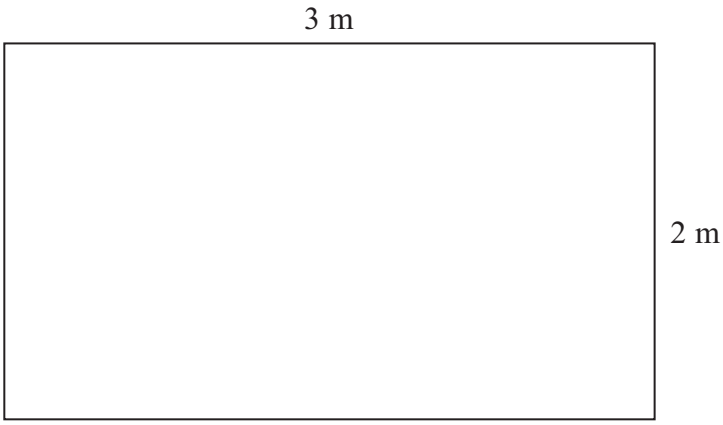
£ .....

(4)

(Total for Question 6 is 5 marks)

4 Here is a diagram of part of a wall in Sarah's house.

Diagram **NOT** accurately drawn



Sarah is going to cover this part of the wall with square tiles.
The square tiles have sides of 20 cm.

Work out the number of tiles Sarah needs.

..... tiles

(Total for Question 4 is 3 marks)

5 Ben goes on holiday to Hong Kong.

In Hong Kong, Ben sees a camera costing HK$3179.55
In London, an identical camera costs £285

The exchange rate is £1 = HK$12.30

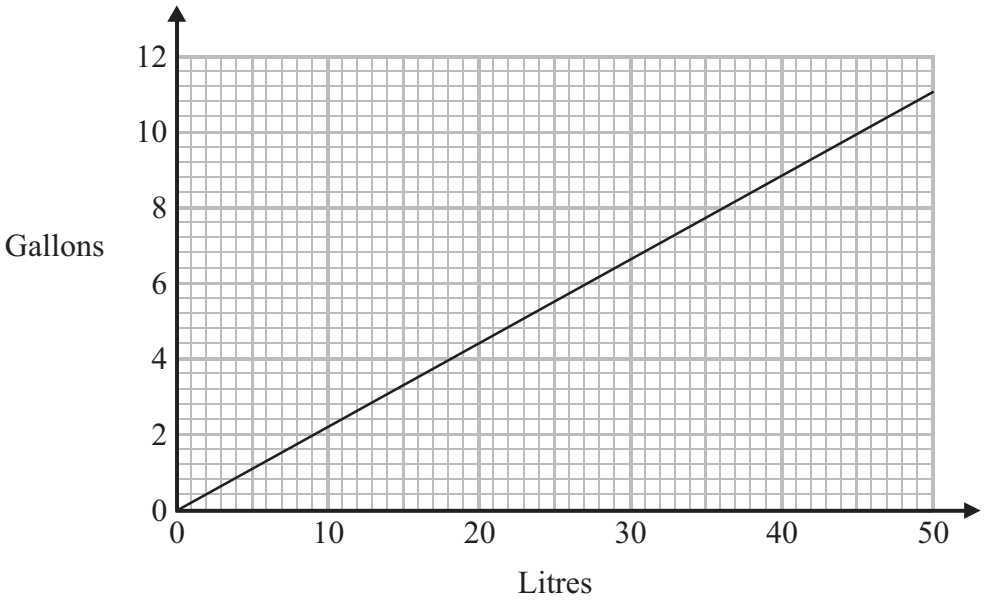
Ben buys the camera in Hong Kong.

How much cheaper is the camera in Hong Kong than in London?

.....

(Total for Question 5 is 3 marks)

***4** You can use this graph to convert between litres and gallons.



Jack buys 8 gallons of diesel.
He pays £52

Francoise buys 40 litres of diesel.
She pays £58

Who got the better value for their money, Jack or Francoise?
You must show your working.

(Total for Question 4 is 3 marks)

14 156 students went to London.

Each student visited one of the British Museum or the National Gallery or the Stock Exchange.

The table gives information about these students.

	Place visited		
	British Museum	**National Gallery**	**Stock Exchange**
Male	25	18	35
Female	27	32	19

Kate takes a sample of 30 of these students.
The sample is stratified by place visited and by gender.

Work out the number of male students who visited the Stock Exchange in the sample.

.....

(Total for Question 14 is 2 marks)

16 Jane has a flower bed in the shape of an equilateral triangle.
The perimeter of the flower bed is 15 metres.

(a) Work out the area of the flower bed.
Give your answer correct to 1 decimal place.

.....m^2

(3)

Jane has some containers in the shape of hemispheres with diameter 35 cm.

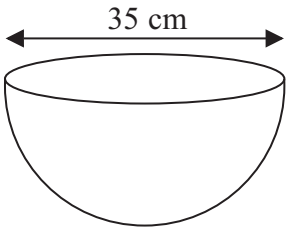


Diagram **NOT** accurately drawn

Jane is going to fill the containers completely with compost.
She has 80 litres of compost.
1 litre = 1000 cm^3.

(b) Work out how many containers Jane can fill completely with compost.

.....

(4)

(Total for Question 16 is 7 marks)

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.....m^2

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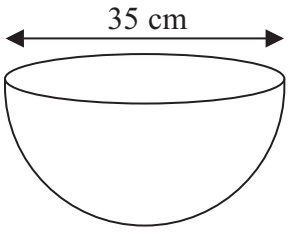

Diagram **NOT** accurately drawn

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She has 80 litres of compost.
1 litre = 1000 cm^3.

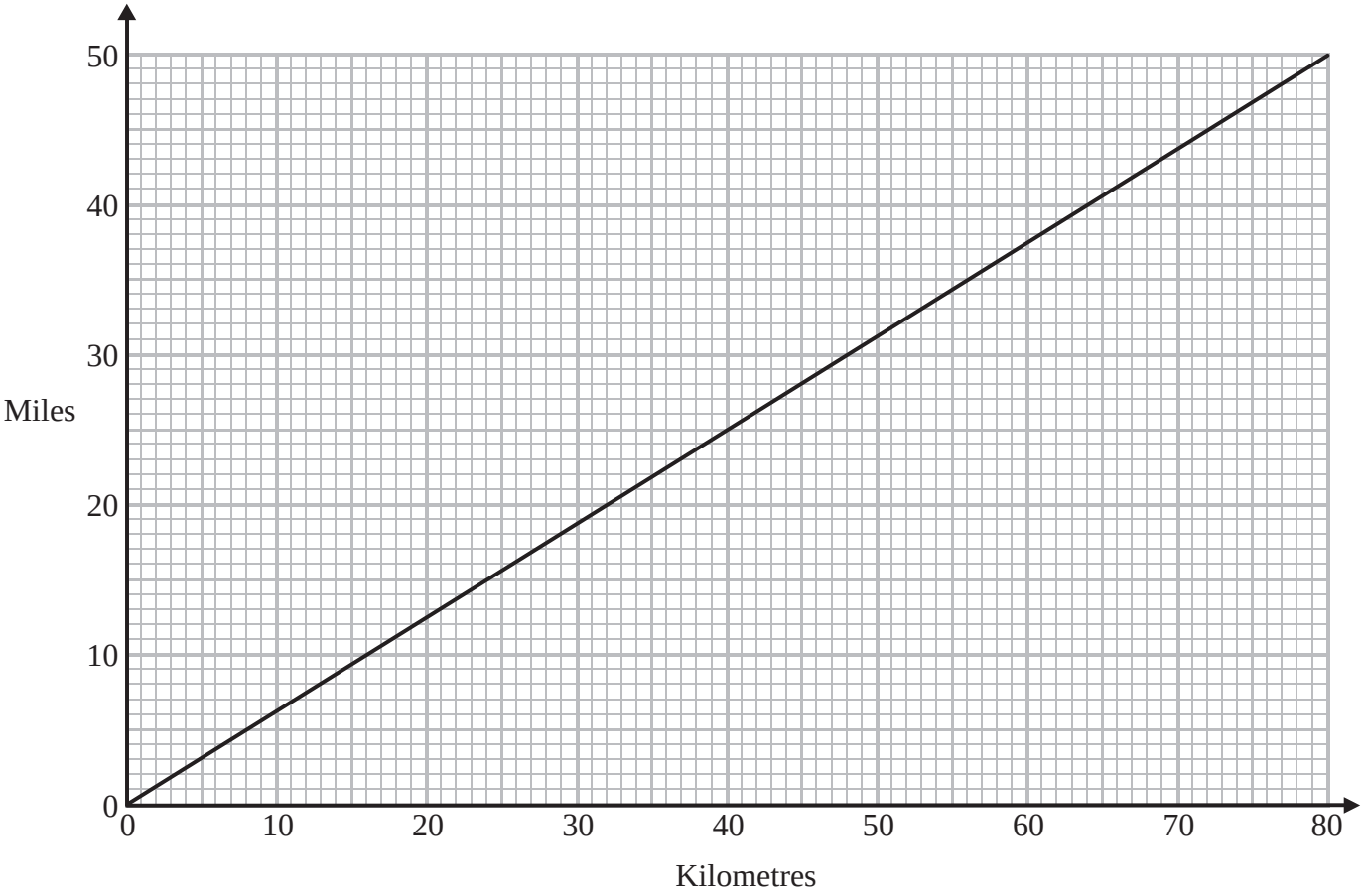
(b) Work out how many containers Jane can fill completely with compost.

.....

(4)

(Total for Question 16 is 7 marks)

***4** You can use this conversion graph to change between miles and kilometres.



Mary has to drive from Paris to Calais, and then from Dover to Sheffield.
The total distance she has to drive is 350 miles.

Mary has already driven 240 km from Paris to the ferry at Calais.
She goes on a ferry to Dover.
She now has to drive from Dover to Sheffield.

Mary has enough petrol to drive 180 miles.

Will Mary have to stop for petrol on the way to Sheffield?

(Total for Question 4 is 4 marks)

2 Tony has a hosepipe.
The length of the hosepipe is 20 m.

Tony stores the hosepipe on a reel.
The weight of the reel is 1.4 kg.

$\frac{1}{2}$ metre of the hosepipe has a weight of 150 grams.

Work out the total weight of the hosepipe and the reel.

..... kg

(Total for Question 2 is 3 marks)

6 Margaret is on holiday in France.

She buys an English newspaper.
The cost of the newspaper is 5 euros.
In England, the cost of the same newspaper is £2.50

The exchange rate is £1 = 1.16 euros.

Work out the difference between the cost of the newspaper in France and the cost of the newspaper in England.

.....

(Total for Question 6 is 3 marks)

***11** The diagram shows the top of Levi's birthday cake.

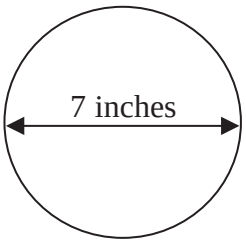


Diagram **NOT** accurately drawn

The top of the cake is in the shape of a circle.
The diameter of the circle is 7 inches.

A ribbon is going to be put around the side of the cake.
Ribbons are sold in 50 cm lengths.

1 inch is 2.54 cm.

Work out if one length of ribbon is long enough to go all the way around the cake.
You must show your working.

(Total for Question 11 is 4 marks)

7 Callum has £240
He wants to buy some tickets that cost 10 euros each.

The exchange rate is £1 = 1.20 euros.

Work out the greatest number of tickets that Callum can buy.

.....

(Total for Question 7 is 3 marks)

6 A rectangle has an area of $4\ m^2$.

Write this area in cm^2.

..... cm^2

(Total for Question 6 is 2 marks)

***8** Colin is on holiday in France.
He buys a wallet.
The wallet costs 31 euros.

In London a wallet costs £23.50

The exchange rate is £1 = 1.34 euros.

Compare the cost of the wallet in France with the cost of the wallet in London.

(Total for Question 8 is 3 marks)

***7** Tina is going from London to the French town of Lille.

Tina will drive from London to Dover.
She will go on the ferry from Dover to Calais.
She will then drive from Calais to Lille.

The distance from London to Dover is 80 miles.
The distance from Calais to Lille is 120 km.

5 miles = 8 km

Tina has enough fuel in her car to drive 150 miles.

Does she have enough fuel to get from London to Lille?
You must show all your working.

(Total for Question 7 is 3 marks)

3 Identical pairs of boots are sold in London, in Geneva and in Paris.

These boots have a price of

£115 in London
189 Swiss francs in Geneva
174 euros in Paris

The exchange rates are

£1 = 1.39 Swiss francs
£1 = 1.27 euros

Are the boots the best value for money in London or in Geneva or in Paris?
You must show how you get your answer.

.....

(Total for Question 3 is 3 marks)

Question 26

November 2019 | 1MA1/3H | Original Q5

5 Write $37\,cm^3$ in mm^3

..... mm^3

(Total for Question 5 is 1 mark)

7 (a) Change 8000 cm^3 to m^3

..... m^3
(1)

(b) Change a speed of 180 km per hour to metres per second.

..... metres per second
(3)

(Total for Question 7 is 4 marks)

Question 28

November 2023 | 1MA1/3H | Original Q11

11 The floor plan of a house is drawn using a scale of $1:50$
On the plan, a room in the house has a floor area of $48\,cm^2$

Work out the real area of the floor of this room.
Give your answer in m^2

..... m^2

(Total for Question 11 is 3 marks)

3

Choci bar	Choci bar
200 g	360 g
£3.50	7.20 Swiss francs
London	**Zurich**

In London, a 200 g Choci bar costs £3.50
In Zurich, a 360 g Choci bar costs 7.20 Swiss francs.

The exchange rate is £1 = 1.25 Swiss francs.

In which city is the Choci bar the better value for money, in London or in Zurich?
You must show how you get your answer.

(Total for Question 3 is 3 marks)