

Write your name here

Surname

Other names

Centre Number

Candidate Number

Edexcel GCSE

Applications of Mathematics

Unit 1: Applications 1

For Approved Pilot Centres ONLY

Foundation Tier

Tuesday 11 June 2013 – Morning

Time: 1 hour 45 minutes

Paper Reference

5AM1F/01

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

Instructions

- 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.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.



Information

- The total mark for this paper is 100
- 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.

Advice

- 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.

Turn over ►

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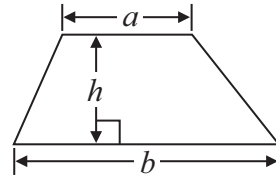
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GCSE Mathematics 2AM01

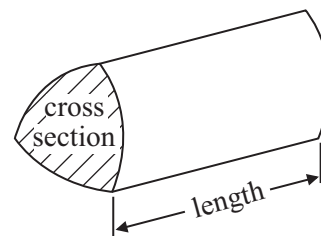
Formulae: Foundation Tier

**You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.**

Area of trapezium = $\frac{1}{2}(a + b)h$



Volume of prism = area of cross section \times length



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1 34 608 people watched a cricket match.

(a) Write 34 608 to the nearest thousand.

.....
(1)

431 of these people were children.

(b) Write 431 to the nearest ten.

.....
(1)

(Total for Question 1 is 2 marks)

2 The table shows information about 7 freezers.

Make	Cost	Type	Dimensions (cm)			Volume (litres)
			Height	Width	Depth	
Coldpoint	£320	tall	151	61	69	172
Endisit	£290	under counter	86	60	62	84
Foggit	£210	tall	140	55	56	130
Milton	£140	under counter	85	55	56	65
Siele	£408	under counter	85	60	66	74
Trasko	£298	tall	146	56	62	166
Zeko	£144	under counter	84	55	62	69

(a) Which freezer costs the most money?

.....
(1)

Two freezers have a volume less than 70 litres.

(b) Which of these two freezers has the least height?

.....
(1)

Barry wants to buy the cheapest **tall** freezer with a width less than 60 cm.

(c) What is the depth of this freezer?

..... cm
(1)

(Total for Question 2 is 3 marks)



3 A baby weighs 3.2 kg.

(a) Change 3.2 kg into grams.

..... grams
(1)

A path has a length of 670 cm.

(b) Change 670 cm into metres.

..... metres
(1)

There are 1.5 litres of water in a jug.
Malik puts 200 ml of water into the jug.

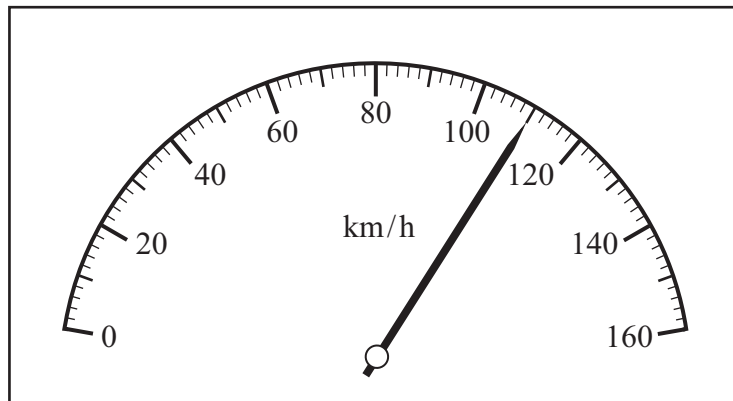
(c) How much water is in the jug now?
Give your answer in litres.

..... litres
(2)

(Total for Question 3 is 4 marks)

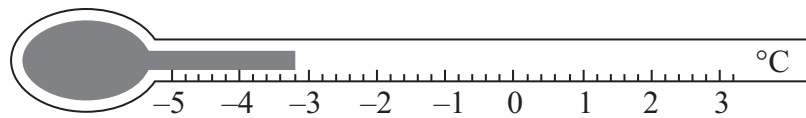


4 (a) What speed is shown on this speedometer?



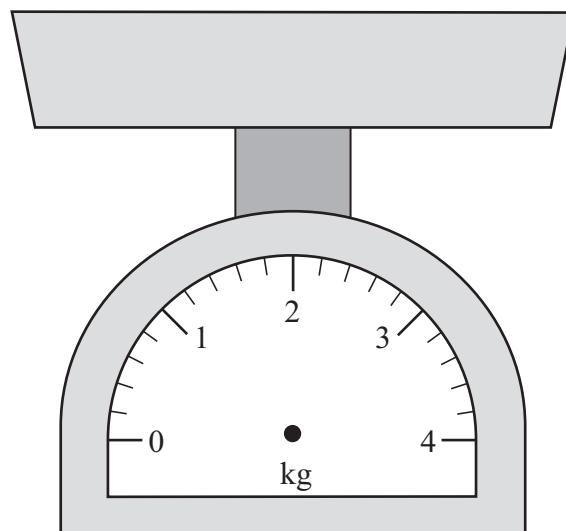
..... km/h
(1)

(b) What temperature is shown on this thermometer?



.....°C
(1)

(c) On the scales, draw an arrow to show a weight of 2.4 kg.



(1)

(Total for Question 4 is 3 marks)



5 Cal makes wooden boxes.

Here are the tops of two different boxes.



Box A



Box B

(a) Write down the order of rotational symmetry of the top of box A.

.....
(1)

(b) How many lines of symmetry does the top of box B have?

.....
(1)

Cal is going to make a different box.

The top of this box will be in the shape of an isosceles triangle.

Cal wants the two small angles to be the same size.

He wants the third angle to be three times the size of each small angle.

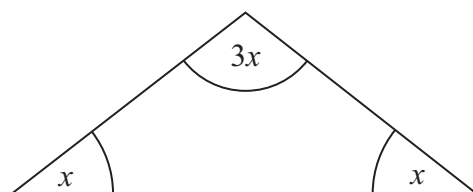


Diagram **NOT**
accurately drawn

(c) Work out the size of each small angle.

.....
(3)

(Total for Question 5 is 5 marks)

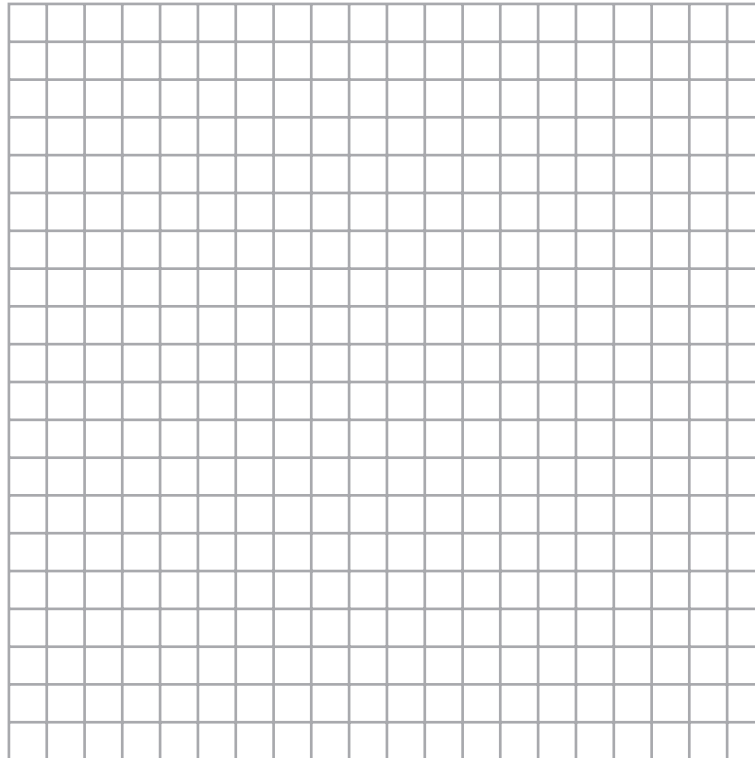


6 Paul records the number of each colour of car in the school car park on Monday.

The table shows this information.

Colour	blue	silver	black	red	green
Frequency	11	18	9	16	6

Show this information in a suitable graph or chart.



(Total for Question 6 is 3 marks)



7 Rachel goes to a theme park.
She counts the number of people in each of 10 boats on a water ride.

1 1 1 2 3 4 4 4 4 6

(a) Write down the mode.

.....
(1)

(b) Work out the range.

.....
(1)

(c) Work out the mean.

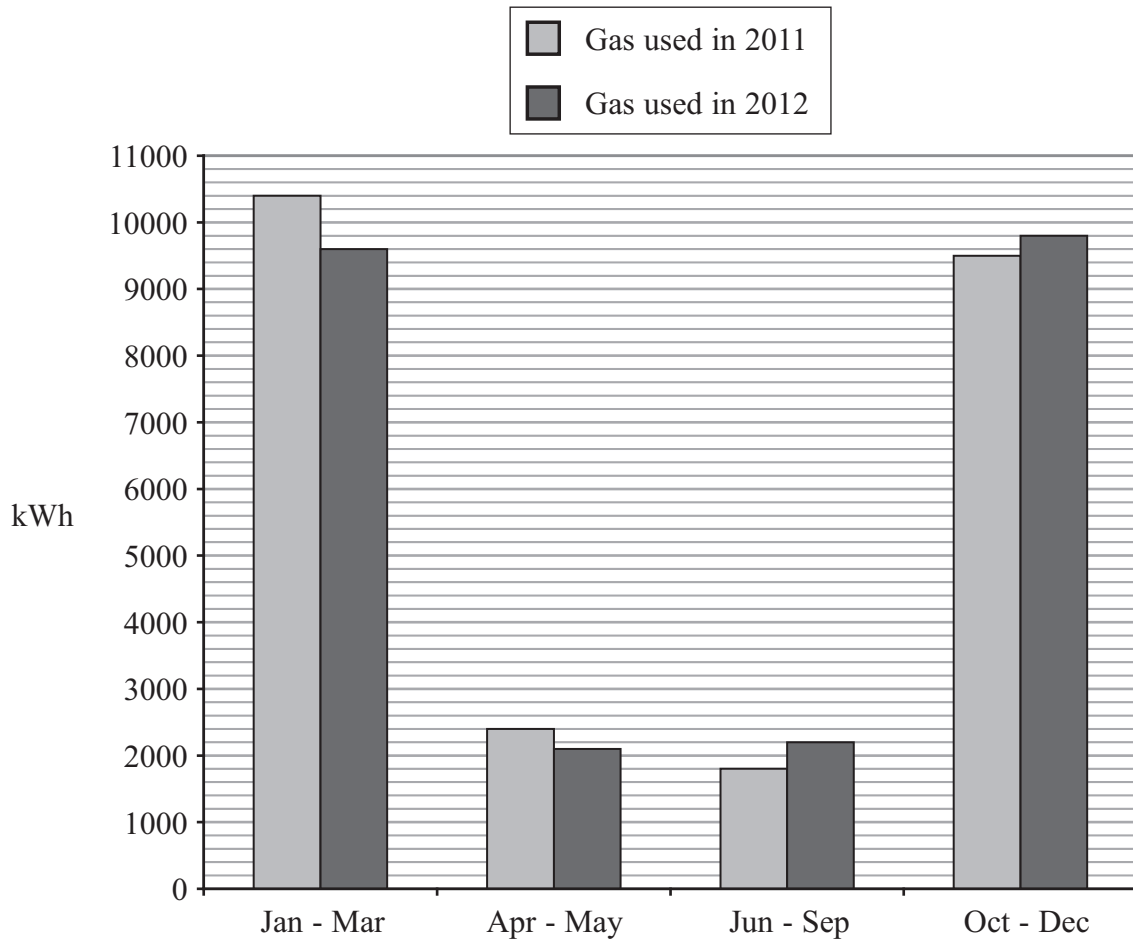
.....
(2)

(Total for Question 7 is 4 marks)



8 Mr Bruce finds out how much gas his family used in 2011 and 2012

The graph shows this information.



(a) How much gas did the Bruce family use in Jan - Mar 2012?

..... kWh
(1)

The Bruce family used less gas in 2012 than they used in 2011

(b) How much less gas?

..... kWh
(3)

(Total for Question 8 is 4 marks)



9 Mr Shah has a shop.

Here is the price list for the salad items in his shop.

Price list	
Lettuce	78p each
Cucumber	69p each
Red pepper	75p each
Spring onions	64p per bunch
Tomatoes	£1.84 per kg

Mrs Brown buys one lettuce and one bunch of spring onions.
She pays with a £5 note.

(a) How much change should she get?

£.....
(3)

Jack buys $2\frac{1}{2}$ kg of tomatoes.

(b) Work out the total cost of the tomatoes.

£.....
(2)

Bella wants to buy as many red peppers as possible.
She only has £5

(c) Work out the greatest number of red peppers she can buy.

.....
(2)



Mr Shah uses a spreadsheet to record the cost of 1 kg of bananas in his shop. He also uses the spreadsheet to record the number of kilograms of bananas he sells.

The spreadsheet shows this information for 4 weeks.

	A	B	C	D
1		cost of 1 kg of bananas in pence	number of kg of bananas sold	
2	week 1	63	53	
3	week 2	67	72	
4	week 3	65	84	
5	week 4	68	69	
6				

Mr Shah also wants the spreadsheet to show

in cell C6, the total number of kilograms of bananas he sold in the 4 weeks
 in cell D2, the total cost of all the bananas he sold in week 1

(d) Write down,

(i) a formula for cell C6

C6.....

(ii) a formula for cell D2

D2.....

(3)

(Total for Question 9 is 10 marks)



10 Liam works out the time it will take to cook a chicken.

He uses this number machine.



Liam's chicken has a weight of 3 pounds.

(a) Work out the time it will take to cook this chicken.

..... minutes
(2)

It takes 125 minutes to cook a different chicken.

(b) Work out the weight of this chicken.

..... pounds
(3)

(Total for Question 10 is 5 marks)



11 Angie has a bank account.

The table shows the money Angie puts into her account and the money she takes out of her account from 1 to 14 April.

Date	Money into account	Money out of account	Reason
2 April		£45.60	Food
2 April		£195.00	Rent
3 April		£60.00	Cash
4 April		£23.90	Shoes
7 April	£240		Wages
9 April		£27.99	Books
10 April		£45.00	Night out
12 April		£50.00	Cash
13 April	£35		Birthday present
13 April		£15.80	Lunch out
14 April	£240		Wages

On 1 April Angie has £430 in her bank account.

Work out how much money Angie has in her bank account at the end of 14 April.

£.....

(Total for Question 11 is 3 marks)



12 Lesley goes to the theatre to see a play.

The play starts at 15 00

The play will finish after 140 minutes.

(a) What time will the play finish?

.....
(3)

Lesley goes by train to the theatre.

The normal price of a train ticket is £29.76

Lesley has a railcard.

She gets $\frac{1}{3}$ off the price of her train ticket.

(b) How much does Lesley pay for her train ticket?

£.....
(3)

The theatre had 450 tickets to sell.

300 of these tickets have been sold.

(c) What fraction of the tickets have been sold?

Give your fraction in its simplest form.

.....
(2)

(Total for Question 12 is 8 marks)



13 Alan's wages are £240 each week.

He wants to save some money to buy a television.

The television costs £216

Alan is going to save 10% of his wages each week.

How many weeks will it take Alan to save enough money to buy the television?

.....
(Total for Question 13 is 4 marks)

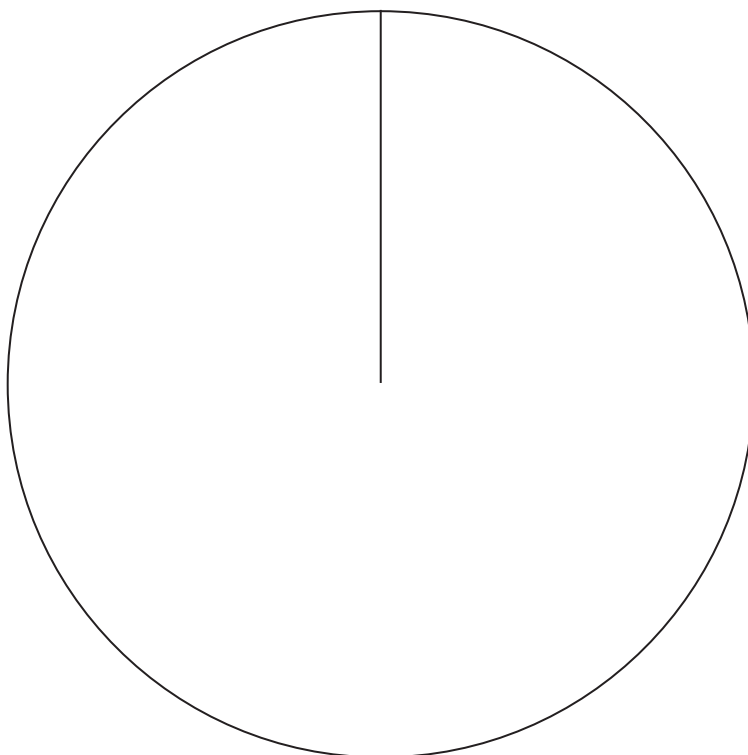


14 Jez carried out a survey on the type of food people bought from a snack bar.

The table gives information about his results.

Type of food	Frequency
Burger	28
Hot dog	50
Pizza	42

Draw an accurate pie chart to show this information.



(Total for Question 14 is 3 marks)



15 David wants to do a survey to find out how the students in his class travelled to school one morning.

Design a suitable table for a data collection sheet he could use.

(Total for Question 15 is 3 marks)



***16** Lynn is planning a Christmas party for her badminton club.

Here are her costs.

Food	£176
Drink	£103
Hire of room	£36 per hour

Lynn wants to hire the room for 4 hours.

There will be 28 people at the party.

Lynn will charge these people £15 each.

Will Lynn get enough money to pay all her costs?

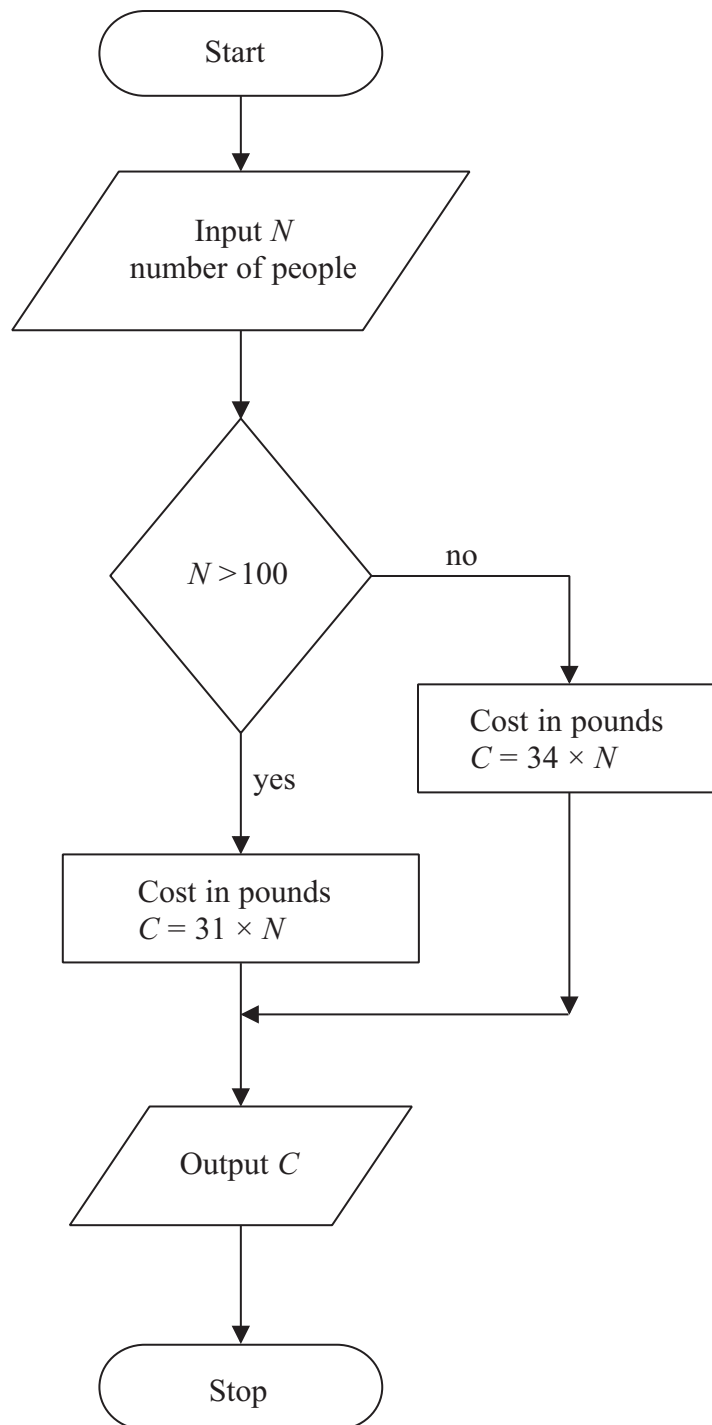
You must show your working.

(Total for Question 16 is 4 marks)



17 Mr Hughes is the manager of a hotel.

He uses this flowchart to work out the total cost of meals for a group of people.



Use the flowchart to work out the total cost of meals for a group of 85 people.

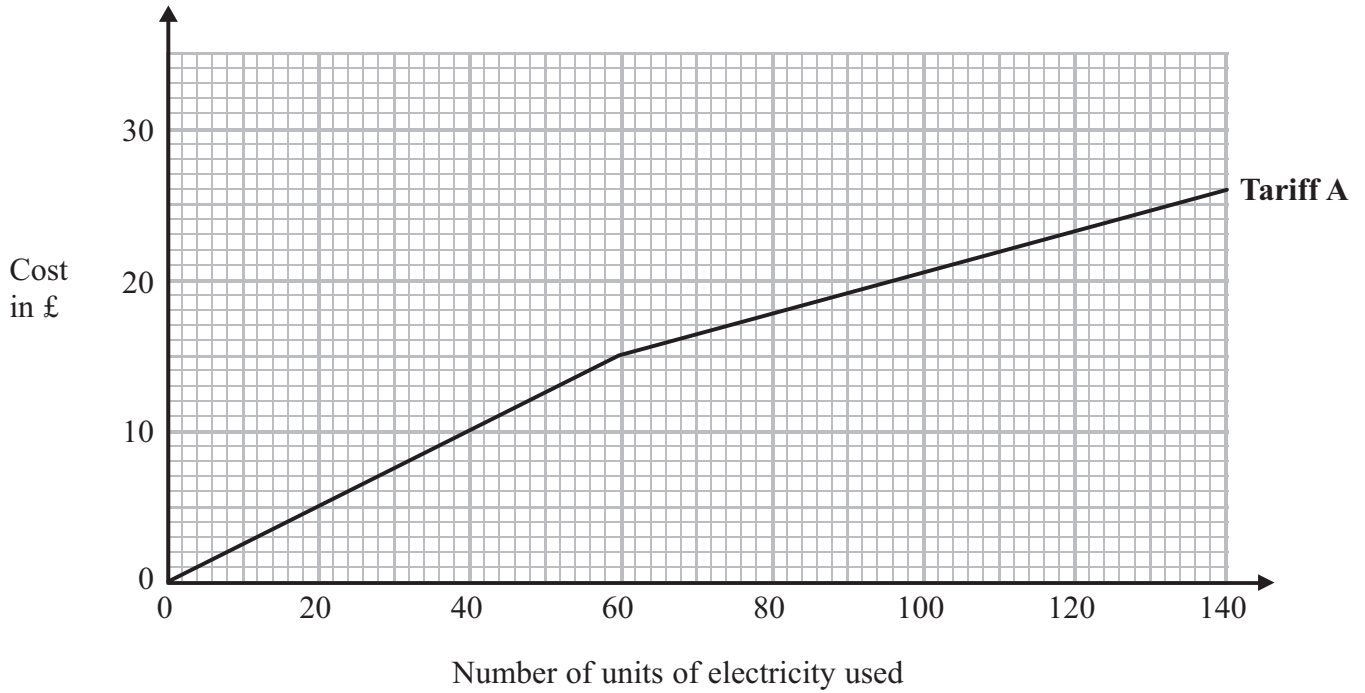
£.....

(Total for Question 17 is 2 marks)



18 Kalinda pays on Tariff A for the number of units of electricity she uses.

Kalinda can use this graph to find out how much she pays each month.



In January, Kalinda used 110 units of electricity.

(a) How much does Kalinda pay for her electricity in January?

£.....
(1)

(b) How much does Kalinda pay for each unit of electricity she uses up to a total of 60 units?

..... p
(2)



Kalinda could change to Tariff B.
Here is the monthly charge for Tariff B.

20p per unit of electricity used

On average, Kalinda uses 90 units of electricity each month.
Kalinda wants to pay the least amount of money for the units of electricity she uses.

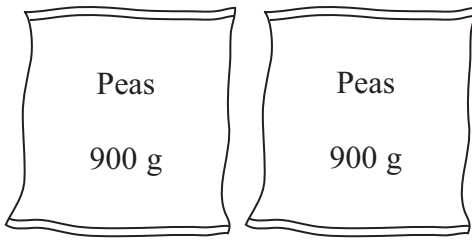
- *(c) Should Kalinda change to Tariff B?
You must show all your working.

(3)

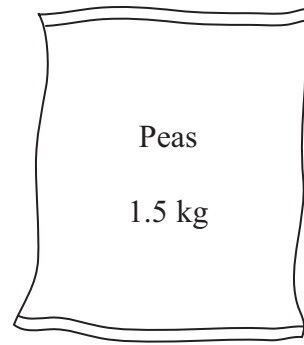
(Total for Question 18 is 6 marks)



*19 Jemma wants to buy some peas.



Peas 900 g 2 bags for £3



Peas 1.5 kg £2.88 per bag

Two 900 g bags of peas cost a total of £3

One 1.5 kg bag of peas costs £2.88

Work out the best value for money, two 900 g bags or one 1.5 kg bag.
You must show all your working.

(Total for Question 19 is 4 marks)



20 Richard is going to cover a bathroom wall with tiles.

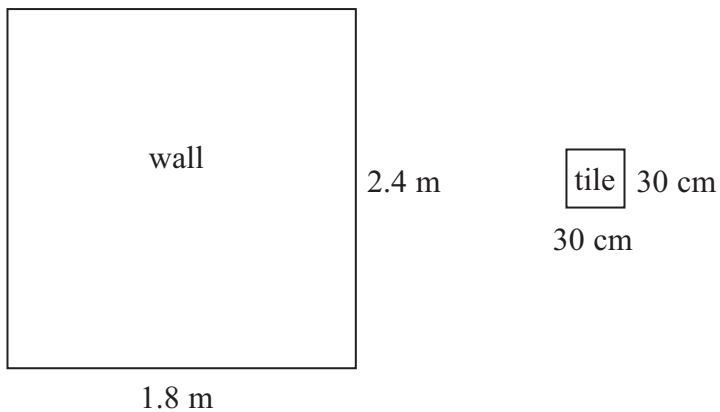


Diagram **NOT**
accurately drawn

The wall is in the shape of a rectangle.
The wall is 1.8 m long and 2.4 m high.

The tiles are squares with sides of 30 cm.

There are 14 tiles in a box.

How many boxes of tiles does Richard need?
You must show all your working.

(Total for Question 20 is 5 marks)



21 Becky, Chris and Dan are playing a game with marbles.

Becky has some marbles.

Chris has three times as many marbles as Becky.

Dan has four marbles more than Chris.

They have a total of 158 marbles.

Work out how many marbles Becky has.

You must show all your working.

.....
(Total for Question 21 is 4 marks)



22 Sal asked 60 adults if they liked Chinese food best or Italian food best or Thai food best.

29 of the adults were women.

6 of the women liked Thai food best.

10 of the men liked Chinese food best.

8 of the 13 adults who liked Italian food best were women.

Work out the number of men who liked Thai food best.

.....
(Total for Question 22 is 4 marks)



23 Graham is going to carry out a survey on holidays.
He wants to find out how often people go on holiday.

Design a question that Graham could use in his questionnaire.

(Total for Question 23 is 2 marks)



24 Malcolm's salary is £28 000
His salary is increased by £700

(a) Work out the percentage increase in Malcolm's salary.

..... %
(2)

Malcolm puts £3000 into a savings account for 3 years.

The account pays compound interest of

- 4% per annum in the first year
- 4.6% per annum in the second year
- 4.6% per annum in the third year

(b) Work out how much money will be in Malcolm's account at the end of the third year.

£.....
(3)

(Total for Question 24 is 5 marks)

TOTAL FOR PAPER IS 100 MARKS



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