

Write your name here

Surname

Other names

Pearson
Edexcel GCSE

Centre Number

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Candidate Number

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Applications of Mathematics

Unit 2: Applications 2

For Approved Pilot Centres ONLY

Foundation Tier

Friday 13 June 2014 – Morning

Time: 1 hour 45 minutes

Paper Reference

5AM2F/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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5/6/1/1/c2/



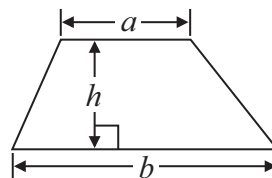
PEARSON

GCSE Mathematics 2AM01

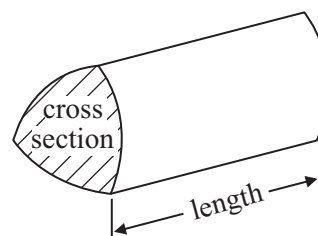
Formulae: Foundation Tier

**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 David takes $2\frac{1}{2}$ hours to drive from Leeds to Manchester.

(a) How many minutes are there in $2\frac{1}{2}$ hours?

..... minutes
(2)

Amir is 1.8 metres tall.

(b) Change 1.8 metres into centimetres.

..... centimetres
(1)

Sarah uses 2200 grams of flour to make some bread.

(c) Change 2200 grams into kilograms.

..... kilograms
(1)

Keith goes on a 5 mile bike ride.

(d) How many kilometres is the bike ride?

..... kilometres
(1)

(Total for Question 1 is 5 marks)



2 Here are the prices of tickets for a concert.

Concert	
adult ticket	£10.95
child ticket	£5.50
family ticket (2 adults and 2 children)	£25

Tom buys an adult ticket and a child ticket.

(a) Work out the total cost.

£
(1)

Mr and Mrs Smith take their 2 children to the concert.

It is cheaper to buy 1 family ticket than to buy 4 separate tickets.

*(b) How much cheaper?

You must show how you got your answer.

(3)

(Total for Question 2 is 4 marks)



3 27 560 people went to a football match.

(a) Write down the value of the **5** in the number 27 560

.....
(1)

12.4 million people watched the football match on TV.

(b) Write 12.4 million in figures.

.....
(1)

The referee has a height of 1.75 metres.

(c) Write down the value of the 7 in 1.75

.....
(1)

The football match ended at 17 05

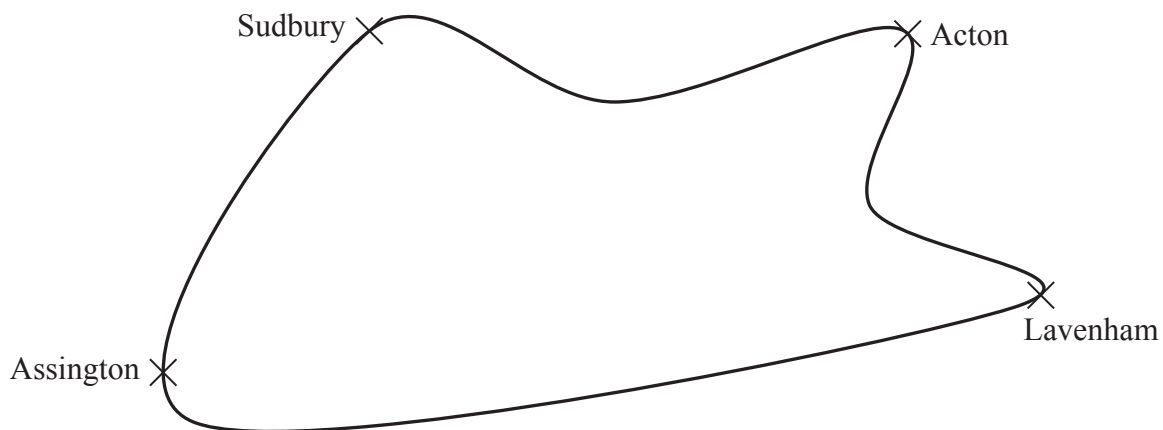
(d) Write **17 05** as a time using the 12 hour clock.

.....
(1)

(Total for Question 3 is 4 marks)



- 4 The diagram shows the position of four places on a bus route.
The bus only stops at these places.



The table shows the number of people getting on the bus and getting off the bus in Acton, Lavenham and Assington.

Place	Number getting off	Number getting on
Acton	10	25
Lavenham	15	17
Assington	5	12

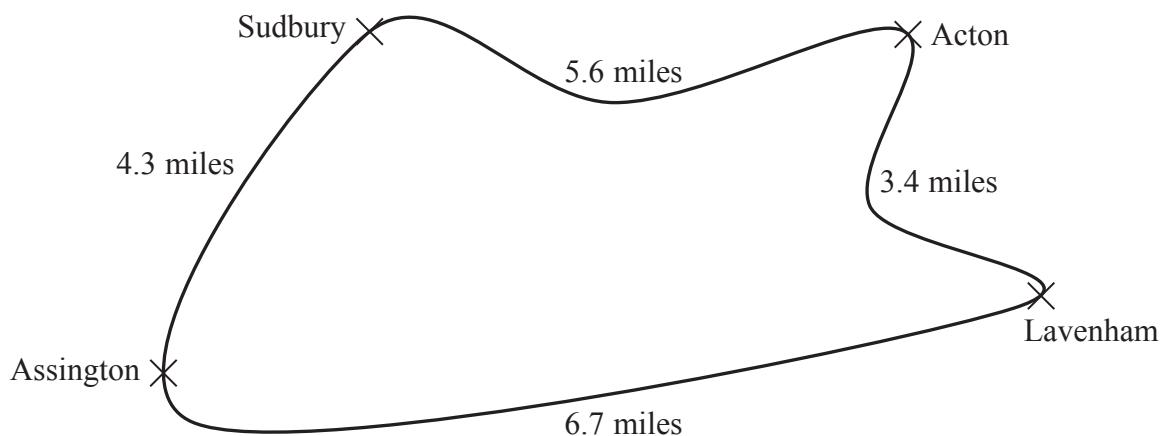
There are 20 people on the bus when it leaves Sudbury.

- (a) Work out the number of people on the bus when it gets back to Sudbury.

.....
(3)



(b) The diagram now shows the distance between the places along the bus route.



Work out the total distance the bus travels on its journey from Sudbury until it gets back to Sudbury.

..... miles
(2)

It is further from Assington to Lavenham and then to Acton, than from Assington to Sudbury and then to Acton.

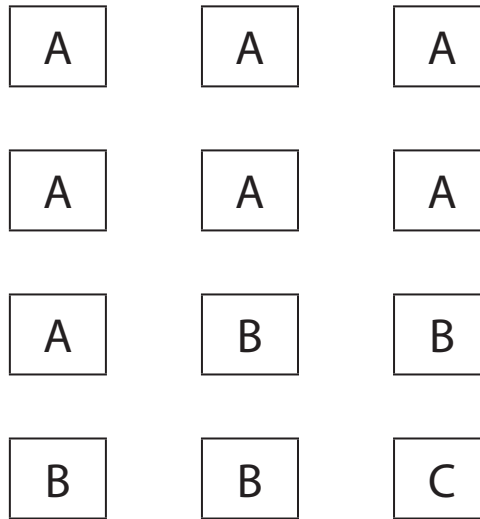
(c) How much further?

..... miles
(2)

(Total for Question 4 is 7 marks)



- 5 The diagram shows twelve cards.
There is a letter on each card.
The cards are used in a game.



Rachel takes at random one of these cards.

- (a) Which letter is **most** likely to be on the card she takes?

.....
(1)

- (b) What is the probability that Rachel takes a card with the letter C on it?

.....
(1)

- (c) What is the probability that Rachel takes a card with the letter B or the letter C on it?

.....
(2)

(Total for Question 5 is 4 marks)



- 6 Tea bags are packed in boxes.
There are 80 tea bags in each box.
Susan uses 5 tea bags each day.

How many boxes of tea bags does Susan need for 365 days?

..... boxes

(Total for Question 6 is 4 marks)



7 Thelma has breakfast in a cafe.

She must choose one item from each list for breakfast.

List 1	List 2	List 3
Bacon	Egg	Fried bread
Sausage	Mushrooms	Toast

Write down all the possible combinations that Thelma can choose for breakfast.

.....

.....

.....

.....

(Total for Question 7 is 2 marks)



8 Gary is a cook.

He uses this word formula to change between temperatures in degrees Fahrenheit and temperatures in degrees Celsius.

$$\text{Temperature in degrees Celsius} = \text{Temperature in degrees Fahrenheit} \div 2$$

A recipe says use an oven temperature of 400 degrees Fahrenheit.

(a) Use Gary's formula to change 400 degrees Fahrenheit to degrees Celsius.

..... °C
(1)

A different recipe says to use an oven temperature of 160 degrees Celsius.

(b) Use Gary's formula to change 160 degrees Celsius to degrees Fahrenheit.

..... °F
(2)

Naomi is a weather girl.

She uses this formula to change temperatures from degrees Fahrenheit (F) to degrees Celsius (C).

$$C = \frac{5(F - 32)}{9}$$

One day the temperature was 59 degrees Fahrenheit.

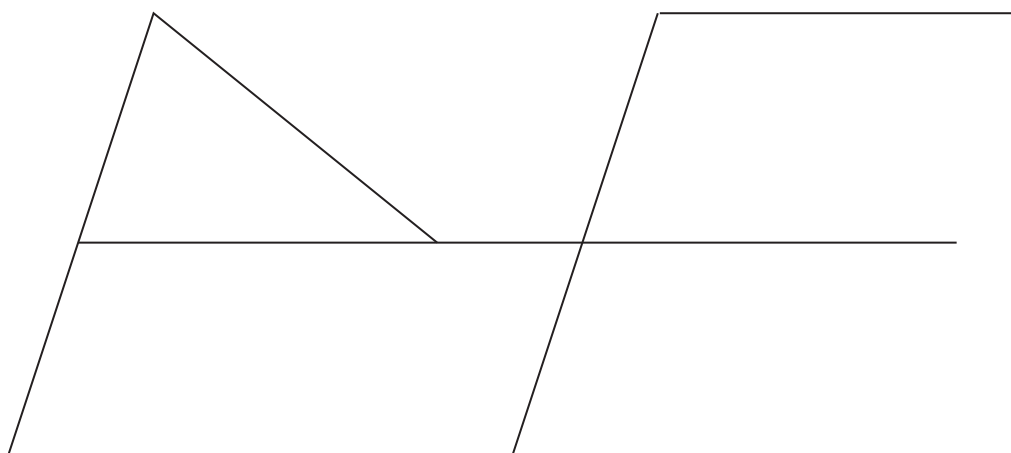
(c) Use Naomi's formula to change 59 degrees Fahrenheit to degrees Celsius.

..... °C
(2)

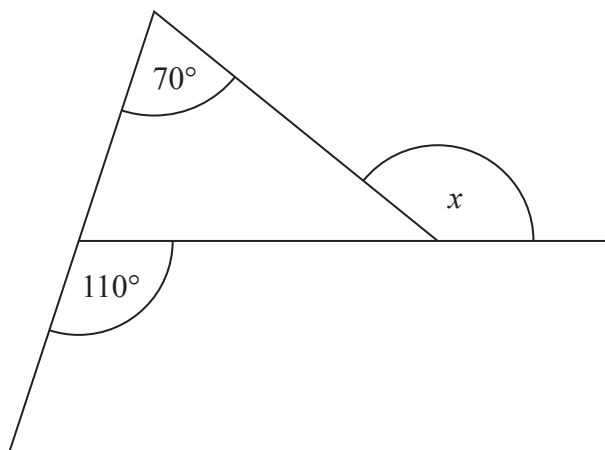
(Total for Question 8 is 5 marks)



9 Here is the logo for the Perfect Fotos art gallery.



Here is part of the logo.

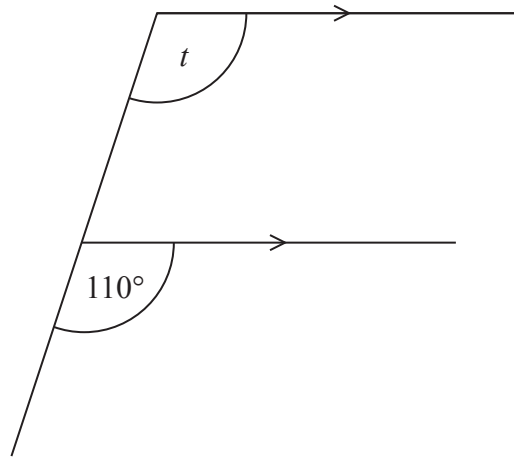


*(a) Find the size of the angle marked x .
Give reasons for your answer.

(3)



Here is the other part of the logo.



(b) (i) Write down the size of the angle marked t .

.....^o

(ii) Give a reason for your answer.

.....
.....

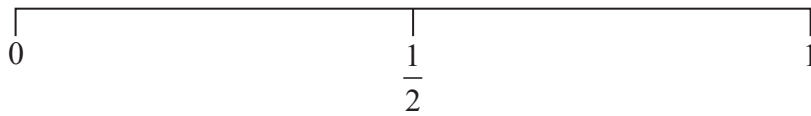
(2)

(Total for Question 9 is 5 marks)



10 (a) Sabrina throws a fair coin.

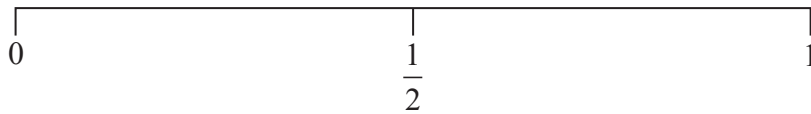
On the probability scale, mark with a cross (×) the probability that the coin will land on tails.



(1)

(b) Suresh throws an ordinary 6-sided dice.

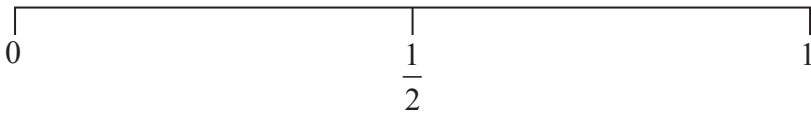
On the probability scale, mark with a cross (×) the probability that he will throw a 7



(1)

(c) There are three yellow sweets and one blue sweet in a bag.
Graham takes at random a sweet from the bag.

On the probability scale, mark with a cross (×) the probability that he will take a blue sweet.

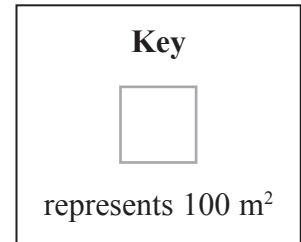
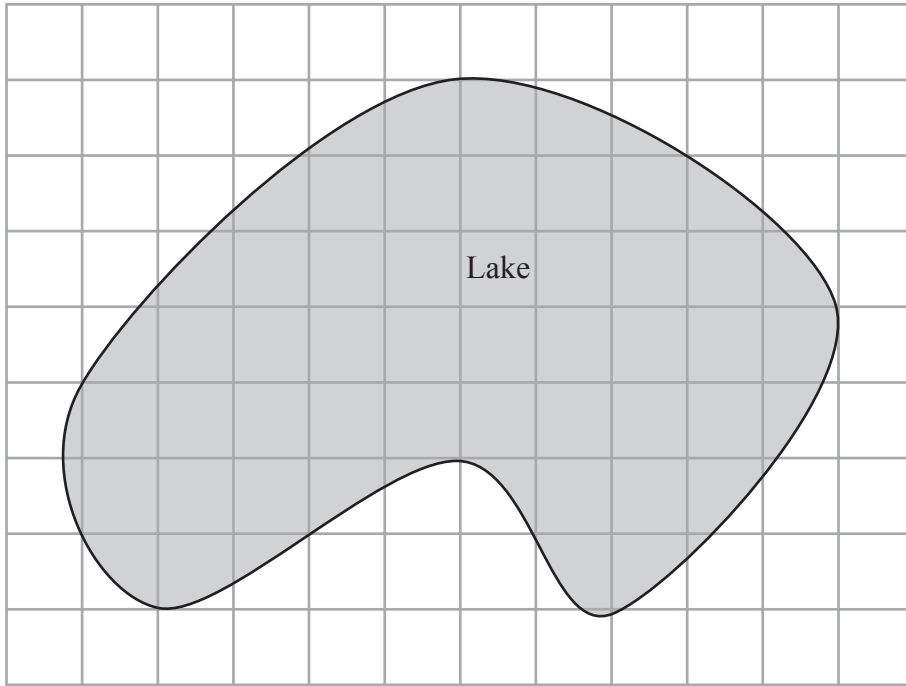


(1)

(Total for Question 10 is 3 marks)



- 11 Here is part of a map drawn on a grid of centimetre squares.
The map shows a lake.



Find an estimate for the area of the lake.
Give your answer in m².

..... m²

(Total for Question 11 is 3 marks)



- *12 Dave has 3 tins of green paint.
Dave has used some of the paint from each tin.



There was 1 litre of paint in each tin.
Now

one tin is half full of paint,
one tin has 0.4 litres of paint in it,

one tin is $\frac{3}{4}$ full of paint.

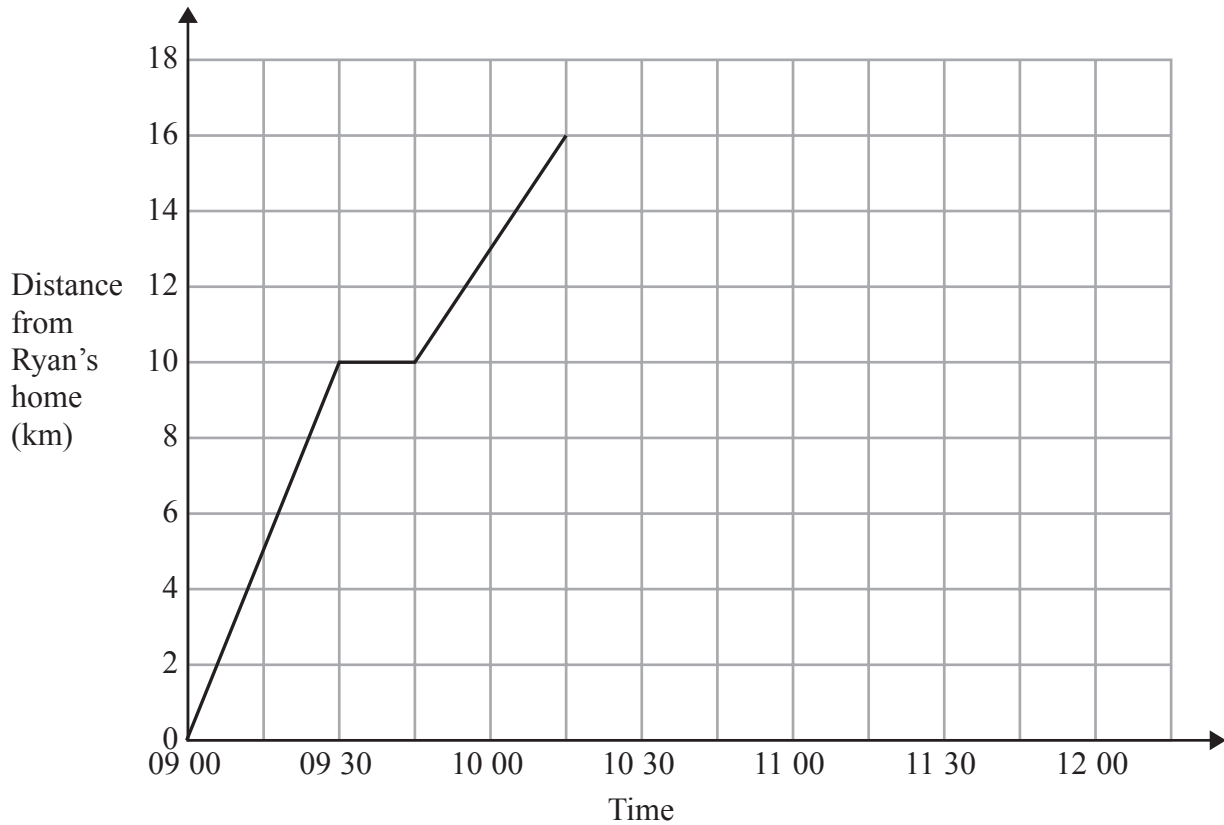
Dave needs a total of $1\frac{4}{5}$ litres of paint.

Does Dave have enough paint?

(Total for Question 12 is 4 marks)



13 Here is a travel graph of Ryan's cycle journey from his home to the shops.



Ryan stopped at some roadworks at 09 30

(a) How far is Ryan from his home at 09 30?

..... km
(1)

The shops are 16 km from Ryan's home.

(b) What time did Ryan get to the shops?

.....
(1)

Ryan was at the shops for 30 minutes.
He then cycled back home without stopping.
He got home at 12 00

(c) Complete the travel graph.

(2)

(d) What was Ryan's average speed on his way home?

..... kilometres per hour
(2)

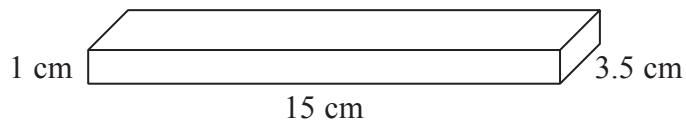
(Total for Question 13 is 6 marks)



14 Terri makes chocolate bars.

Each chocolate bar is a cuboid.

Diagram **NOT**
accurately drawn



Four faces of the chocolate bar are of length 15 cm.

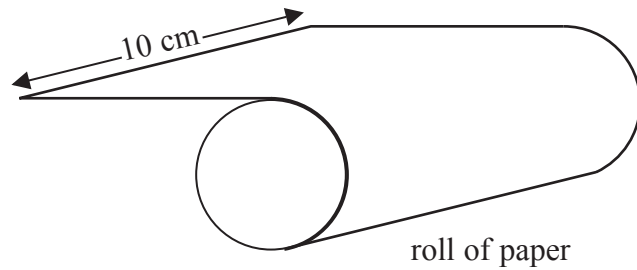
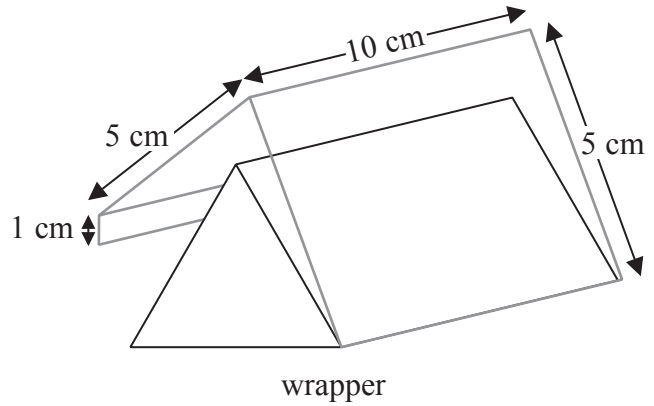
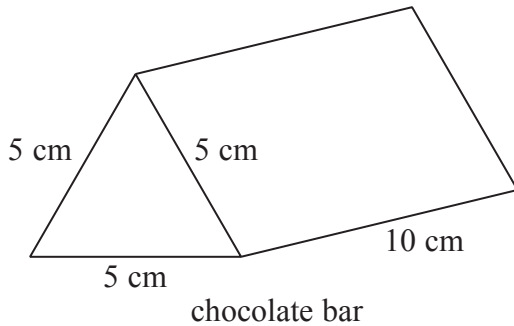
(a) Work out the total surface area of these four faces.

..... cm²
(3)



A different chocolate bar is in the shape of a triangular prism.

Diagram **NOT** accurately drawn



A paper wrapper covers the three rectangular faces of the chocolate bar.
The paper on each wrapper overlaps by 1 cm.

The paper for each wrapper is cut from a roll of paper 500 m long and 10 cm wide.

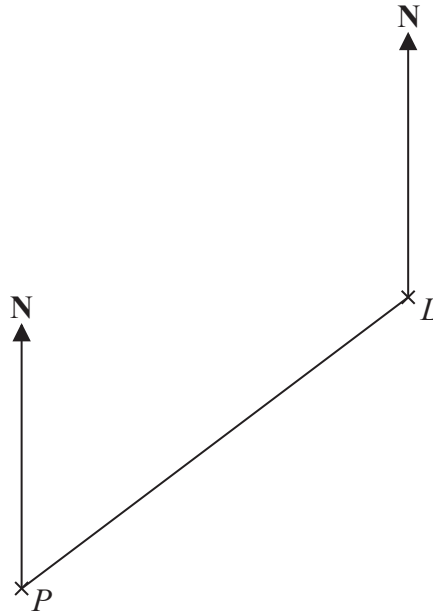
(b) Work out the greatest number of wrappers that can be cut from one roll of paper.

(4)

(Total for Question 14 is 7 marks)



- 15 The diagram shows the position of port P and lighthouse L .
Ben sails his boat from the port to the lighthouse.



Scale 1 cm represents 5 km

- (a) (i) Measure and write down the bearing of lighthouse L from port P .

..... °

- (ii) Work out the distance from port P to lighthouse L .

..... km

(3)

Ben then sails from lighthouse L on a bearing of 140° .
He sails for 2 hours at a speed of 17.5 km/h to port Q .

- (b) Mark port Q with a cross (\times).
Label it Q .

(4)

(Total for Question 15 is 7 marks)



- 16 Bob has a box of toy bricks.
Each toy brick is a cube with side 2.5 cm.

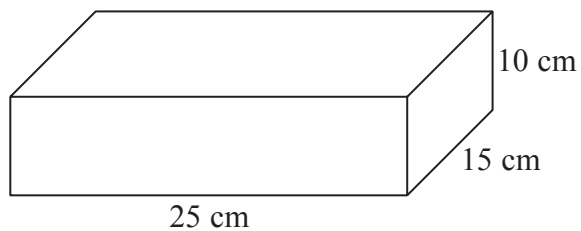


Diagram **NOT**
accurately drawn

The box is completely full of toy bricks.

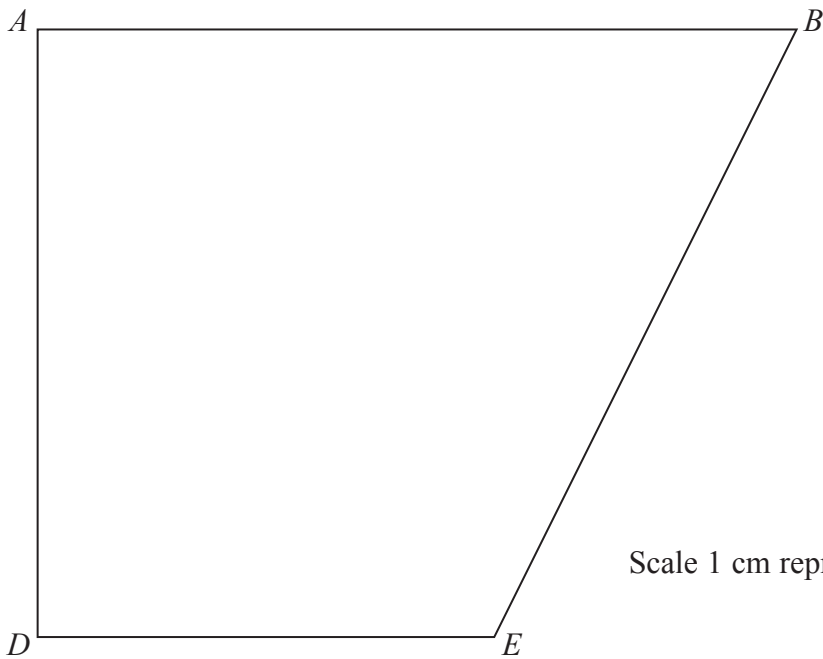
How many toy bricks are there in the box?

..... toy bricks

(Total for Question 16 is 3 marks)



17 Here is an accurate scale drawing of Zena's garden.



Zena is going to plant a tree in the garden.

She will plant the tree

- nearer to AB than to BE ,
- more than 50 m from AD ,
- and less than 60 m from E .

On the diagram, show accurately by shading, the region where Zena will plant the tree.

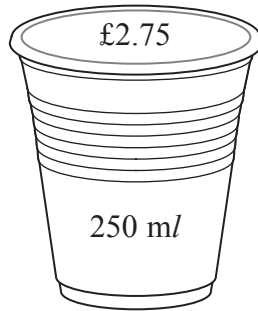
(Total for Question 17 is 4 marks)



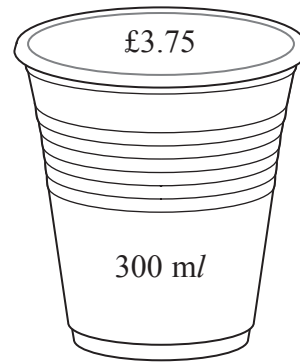
*18 Mario sells coffee in three different sizes of cup.



Small



Medium



Large

Which size cup of coffee is the best value for money?

(Total for Question 18 is 4 marks)



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

Fruit buns	
Flour	300 g
Butter	150 g
Sugar	150 g
Mixed fruit	100 g
Eggs	1
Makes 12 fruit buns	

Rosie has

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

What is the greatest number of fruit buns Rosie can make?
You must show your working.

.....
(Total for Question 19 is 4 marks)



***20** Rashmi is 3 years older than Narinder.
Bhavinda is twice as old as Rashmi.

The total of their ages is less than 50

What is Rashmi's greatest possible age?
Give your answer as a whole number of years.

(Total for Question 20 is 4 marks)



21 Gavin does his shopping in Roots supermarket.
He gets 4 points on his Roots store card for every £1 he spends.

Gavin has spent a total of £660 in Roots supermarket.
He wants to use all the points he has got when he buys a pair of sunglasses.

The sunglasses cost £99
Gavin gets 20p off the cost of the sunglasses for every 10 points on his store card.

Gavin buys the sunglasses.
He uses all the points he has got on his store card.
He pays the rest of the cost in money.

How much of the £99 does he pay in money?

£

(Total for Question 21 is 5 marks)



22 There is only one winning ticket in a raffle.

80 raffle tickets are sold.

The winning ticket will be chosen at random.

Helen buys three raffle tickets.

(a) Work out the probability that Helen will **not** win the raffle.

.....
(1)

Jonty also buys some of the raffle tickets.

The probability that Jonty will win the raffle is 0.05

(b) How many raffle tickets does Jonty buy?

.....
(2)

(Total for Question 22 is 3 marks)



23 An insurance company insured 10 000 small boats last year.
A total of 150 insurance claims were made on these small boats last year.
The company paid an average amount of £1200 on each insurance claim.

The company does **not** want to make a loss when it insures small boats.

What is the least amount of money the company should charge to insure each small boat?

£

(Total for Question 23 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS

