Write your name here

Surname	Other names

Pearson Edexcel GCSE

Centre Number | | | | | |

Candidate Number | | | | |

Mathematics B

Unit 3: Number, Algebra, Geometry 2 (Calculator)

Foundation Tier

Monday 11 November 2013 – Morning
Time: 1 hour 30 minutes

Paper Reference
5MB3F/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 80
- 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 ▶

P44020A

6/5/4/2/2/1/

P 4 4 0 2 0 A 0 1 2 0

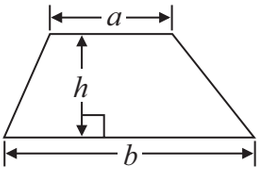
PEARSON

GCSE Mathematics 2MB01

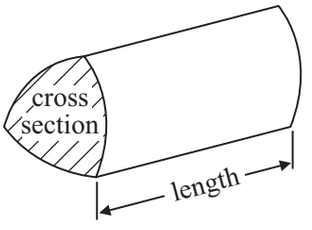
Formulae: Foundation Tier

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 × length

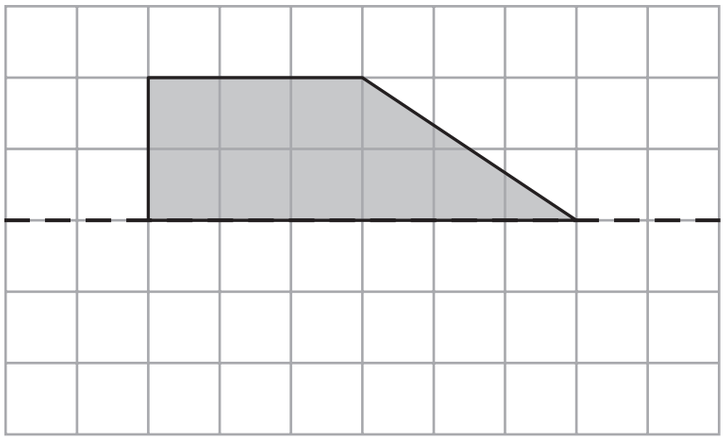


Answer ALL questions.

Write your answers in the spaces provided.

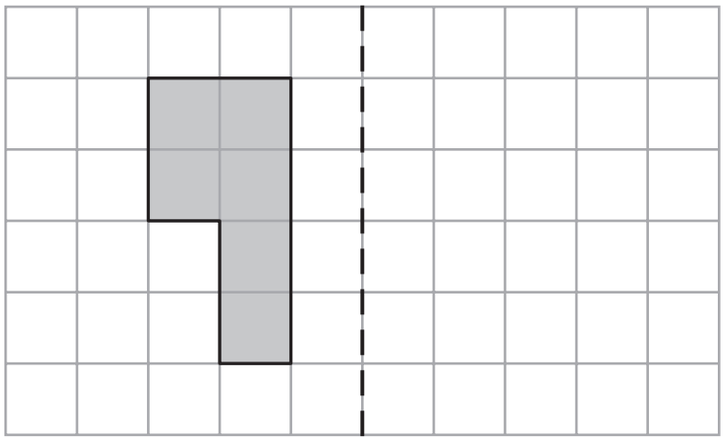
You must write down all stages in your working.

1 (a) Reflect the shaded shape in the mirror line.



(1)

(b) Reflect the shaded shape in the mirror line.

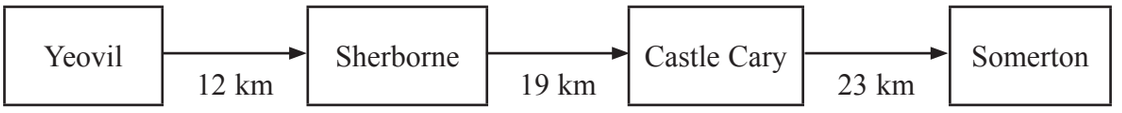


(1)

(Total for Question 1 is 2 marks)

2 The diagram shows the distances between some places on a cycle route.

Diagram **NOT** accurately drawn



(a) Work out the total distance along the route from Yeovil to Somerton.

..... km

(2)

Along the route, the distance from Yeovil to Castle Cary is shorter than the distance from Sherborne to Somerton.

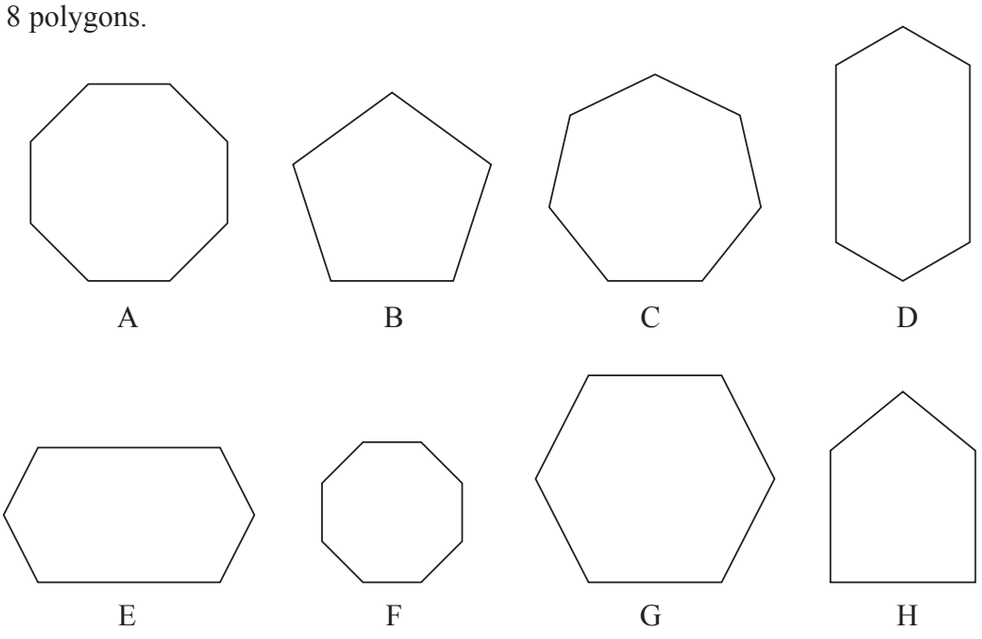
(b) How much shorter?

..... km

(2)

(Total for Question 2 is 4 marks)

3 Here are 8 polygons.



(a) Write down the mathematical name for polygon G.

.....

(1)

Two of the polygons are congruent.

(b) Write down the letters of these polygons.

..... and .....

(1)

One of the polygons is similar to polygon F.

(c) Write down the letter of this polygon.

.....

(1)

The interior angles of this regular polygon add up to 540°.

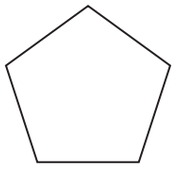


Diagram **NOT** accurately drawn

(d) What is the size of one interior angle?

..... °

(2)

(Total for Question 3 is 5 marks)

4 Jodie thinks of a number.
She then doubles the number and adds 7
The result is 23

What number did Jodie think of?

.....

(Total for Question 4 is 3 marks)

5 (a) Find the square root of 2.89

.....

(1)

(b) Work out 6.4×8.9

.....

(1)

(c) Find the value of 2.7^3

.....

(1)

(Total for Question 5 is 3 marks)

6 Samir had 6 boxes of ice lollies to sell.

There were 24 ice lollies in each box.
Samir did **not** sell 17 of the ice lollies.

Work out how many ice lollies Samir sold.

.....

(Total for Question 6 is 3 marks)

7 (a) Write $\frac{3}{4}$ as a decimal.

.....

(1)

(b) Write 0.3 as a fraction.

.....

(1)

(Total for Question 7 is 2 marks)

8 This rule can be used to work out the distance travelled by a car on a journey.

Distance travelled = average speed × time taken

On a journey, a car's average speed was 80 kilometres per hour.
The time taken was 4 hours.

(a) Work out the distance travelled by the car.

.....kilometres

(2)

On a different journey, the distance travelled by the car was 130 kilometres.
The time taken was 2 hours.

(b) Work out the average speed.

.....kilometres per hour

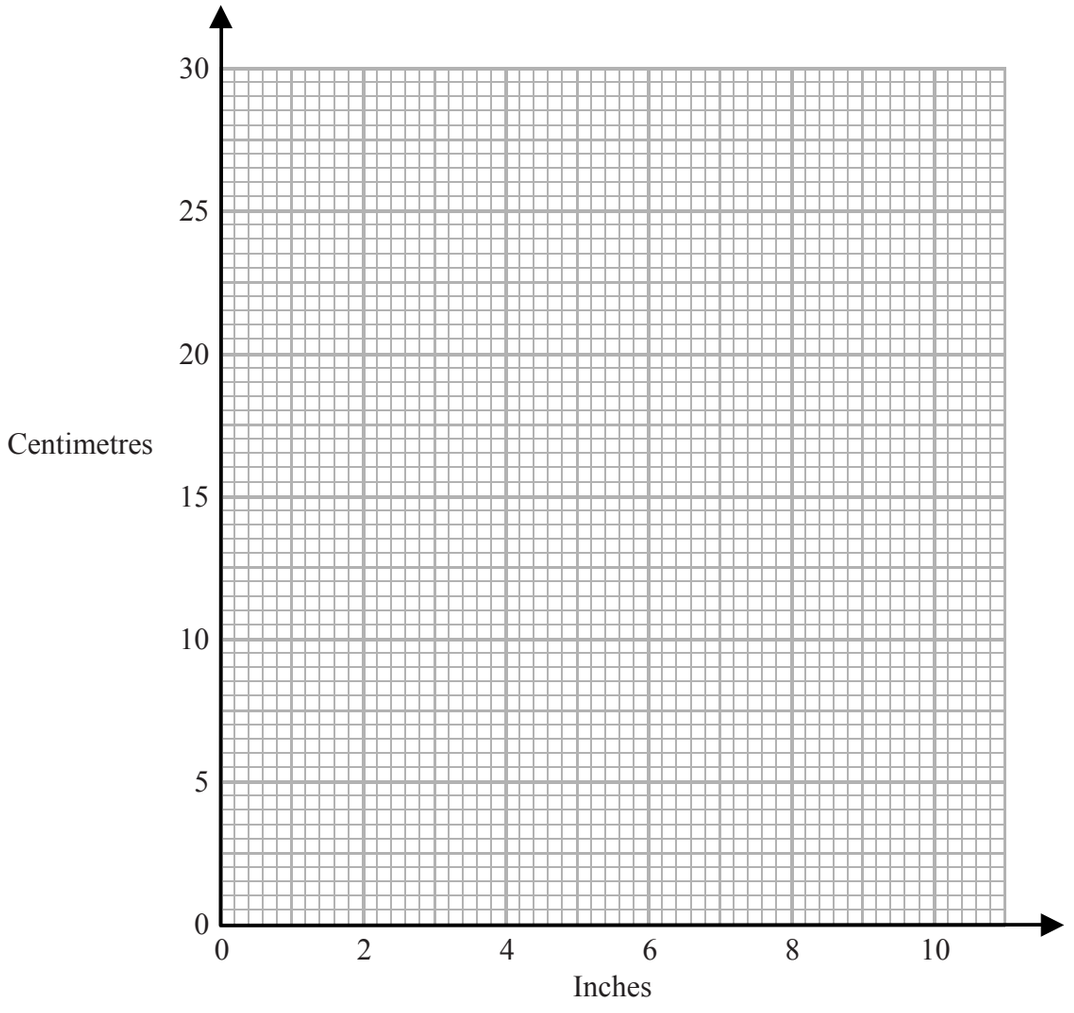
(2)

(Total for Question 8 is 4 marks)

9 The table shows some lengths in inches changed into lengths in centimetres.

Length in inches	0	2	6	10
Length in centimetres	0	5	15	25

(a) On the grid, use this information to draw a line graph that can be used to change between inches and centimetres.



(2)

Kate's height is 62 inches.
Helen's height is 150 centimetres.

*(b) Who is the tallest?

(3)

(Total for Question 9 is 5 marks)

10 (a) Solve $5x = 45$

$x =$ .....

(1)

(b) Solve $w - 8 = 20$

$w =$ .....

(1)

(c) Solve $\frac{t}{7} = 5$

$t =$ .....

(1)

(d) Solve $4x - 9 = 41$

$x =$ .....

(2)

(Total for Question 10 is 5 marks)

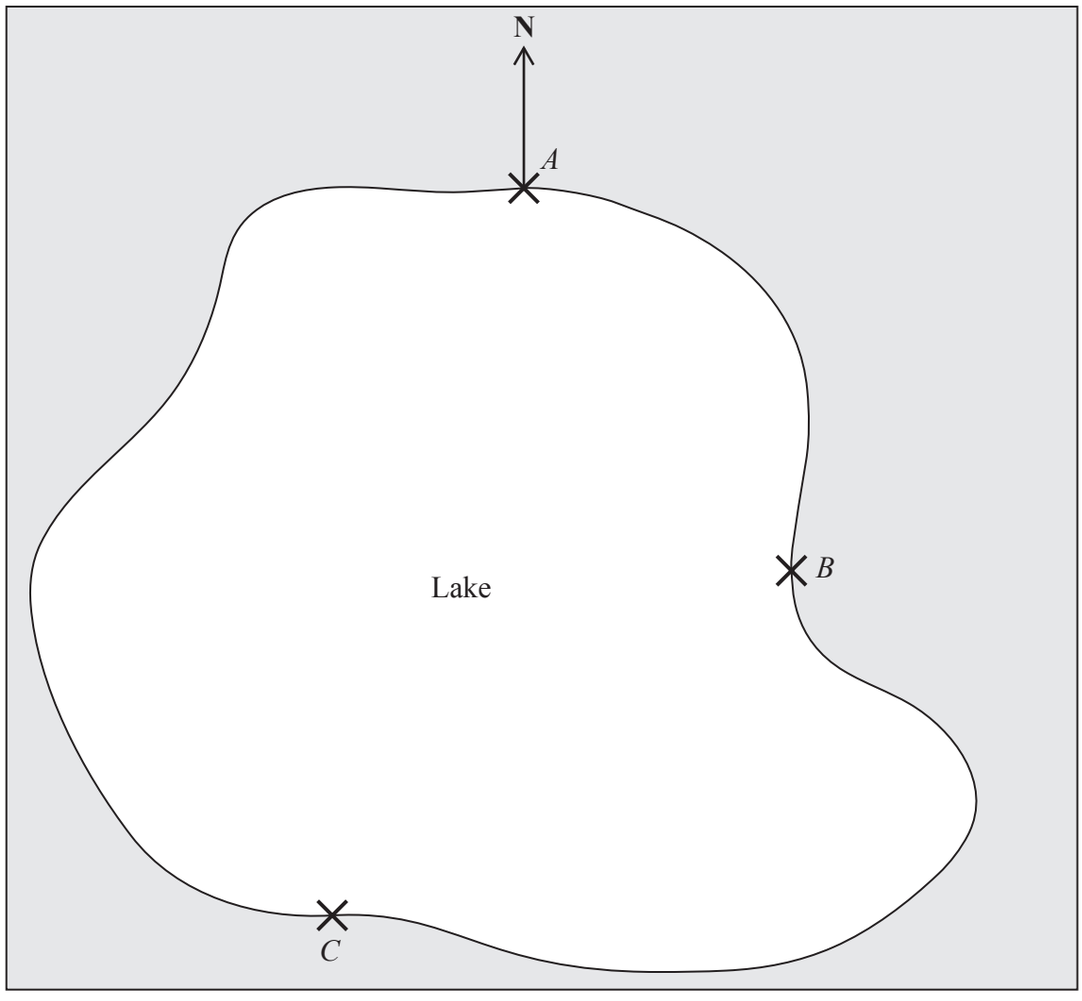
***11** Cheryl is selling books and magazines to raise money for charity.
She wants to raise a total of £50

Cheryl sells 46 hardback books for 50p each.
She sells 68 paperback books for 30p each.
She sells magazines for 20p each.

Cheryl has 26 magazines to sell.
Work out if she has enough magazines to sell to reach her £50 target.

(Total for Question 11 is 5 marks)

12 The map shows the positions of three places A, B and C on the edge of a lake.



Scale 1 cm represents 2 km

(a) Find the bearing of B from A.

.....°

(1)

A ferry travels in a straight line from A to B .
It then travels in a straight line from B to C.

A speedboat travels in a straight line from A to C.

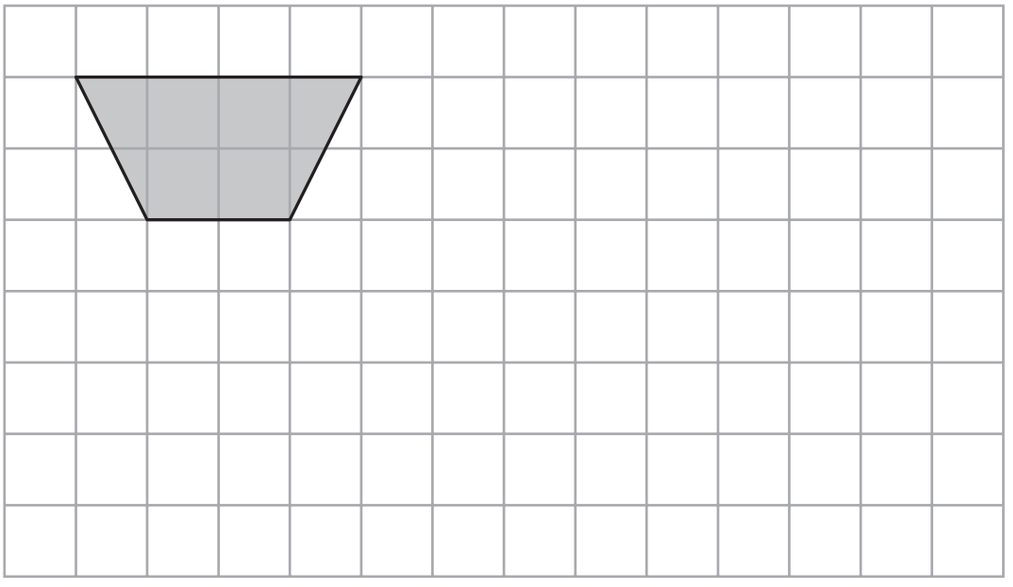
(b) How many more kilometres does the ferry travel than the speedboat?
You must show your working.

.....km

(4)

(Total for Question 12 is 5 marks)

13 On the grid, show how this shape will tessellate.
You should draw at least **six** shapes.



(Total for Question 13 is 2 marks)

14 There are 200 students in Year 11
75 of the students are girls.

(a) Write down the fraction of the students that are girls.

.....

(1)

There is a total of 1350 students in the school.
One day, 81 of the 1350 students are absent.

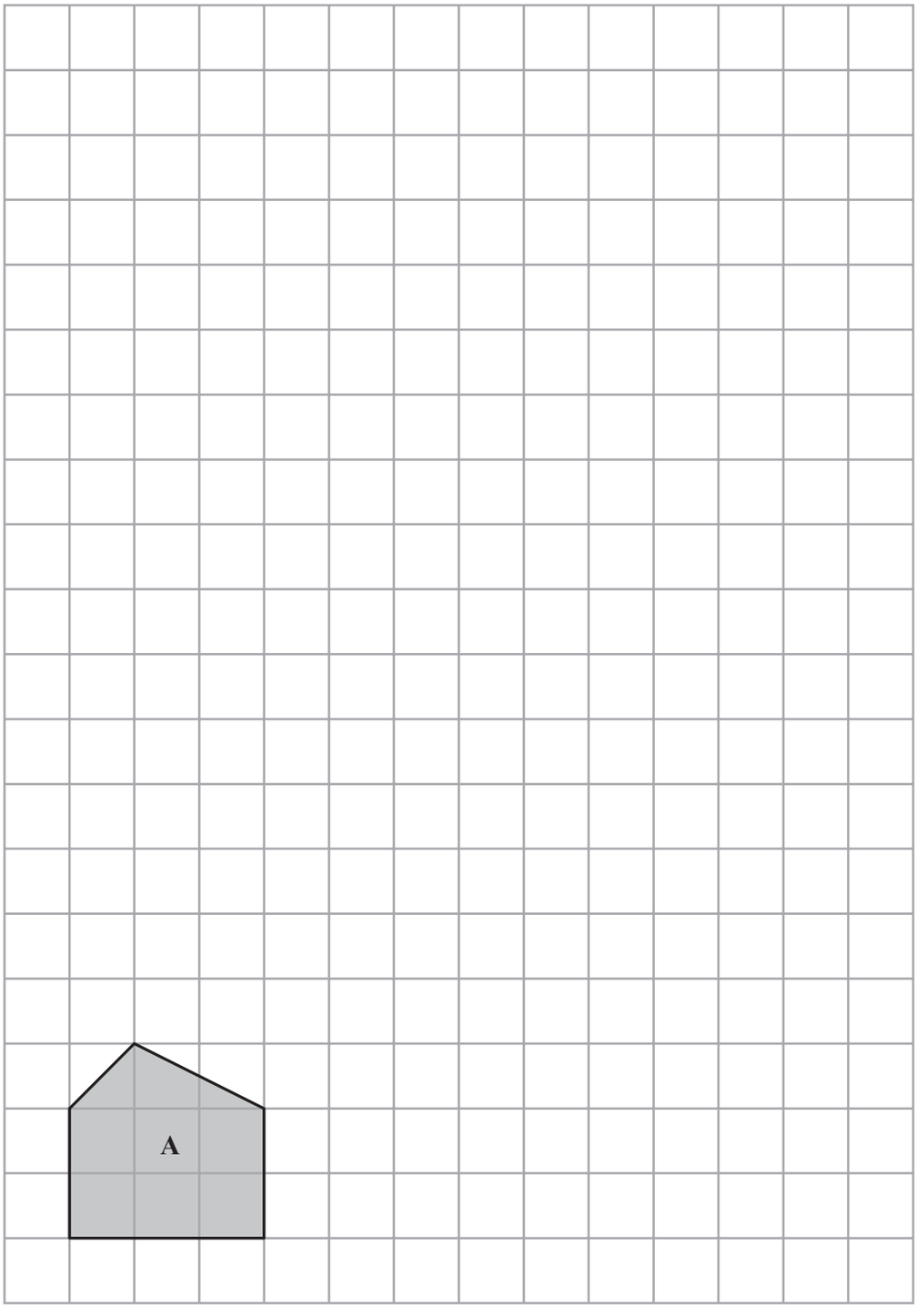
(b) Work out the percentage of the students who are absent.

.....%

(2)

(Total for Question 14 is 3 marks)

15 Shape **A** is shown on the grid.



Draw an enlargement, scale factor 3, of shape **A**.

(Total for Question 15 is 2 marks)

***16** Brenda works in an office.
She finds out the prices of folders from two companies, Office Deals and Paper World.

Office Deals
Packs of 20 folders £10.80

Paper World
Packs of 15 folders £8.40

Brenda needs to buy exactly 60 folders.
She wants to buy the folders as cheaply as possible.

Which company should Brenda buy the folders from?
You must explain your answer.

(Total for Question 16 is 4 marks)

17 Kelan is packing plates in a wooden box.

The empty box has a weight of 4.3 kg.
Each plate has a weight of 760 g.

When the box is packed with plates, the total weight must **not** be more than 25 kg.

Work out the greatest number of plates Kelan can pack in the box.

.....

(Total for Question 17 is 4 marks)

18 $P = 4a + 2b$

Find the value of P when $a = 6$ and $b = 5$

.....

(Total for Question 18 is 2 marks)

19 Mrs Evans is planning a trip to the zoo.

She finds out this information.

July

M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Off peak Peak

Ticket Prices

	Peak	Off peak
Adult	£20.50	£19.50
Child	£15.50	£15.00
Senior citizen	£19	£18

Family Offer

10% Discount	2 adults and 2 children or 1 adult and 3 children

Mrs Evans will go to the zoo on Friday 17th July.
She will need to buy tickets for 1 adult and 3 children.

Mrs Evans wants to buy the tickets as cheaply as possible.

Work out the total cost of the tickets.

£ .....

(Total for Question 19 is 4 marks)

20 Here is a pyramid with a square base.
The sloping faces are identical isosceles triangles.

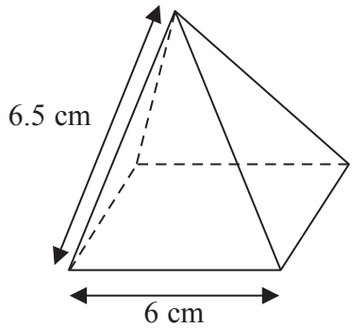
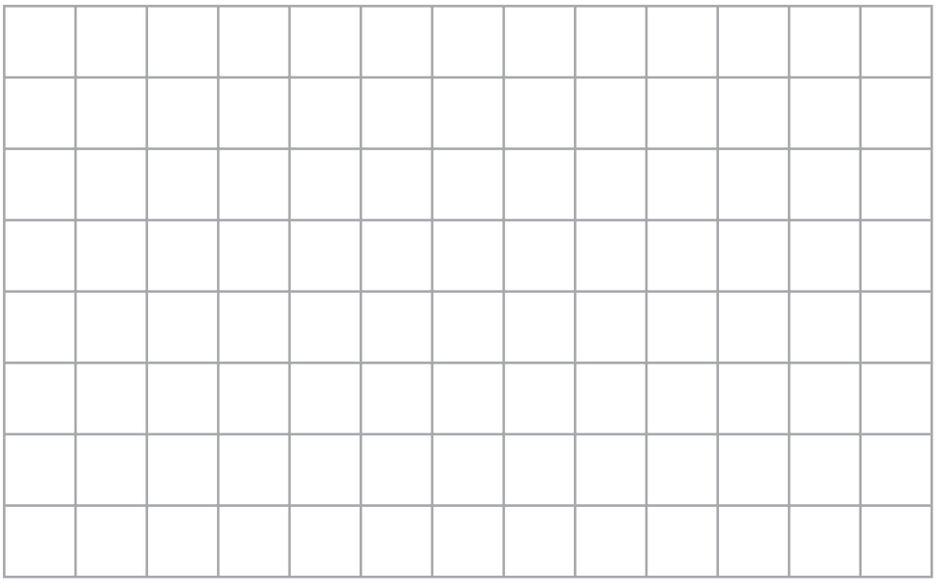


Diagram **NOT** accurately drawn

(a) Draw a full size accurate plan of the pyramid on the centimetre square grid.



(2)

(b) Using a ruler and compasses, construct an accurate drawing of one of the triangular sloping faces of the pyramid.

(3)

(Total for Question 20 is 5 marks)

21 One day a supermarket has 8420 customers.

65% of the customers pay with a debit card.

$\frac{1}{5}$ of the customers pay with a credit card.

The rest of the customers pay with cash.

Work out how many customers pay with cash.

.....

(Total for Question 21 is 4 marks)

22 The equation $x^3 + 4x = 60$ has a solution between 3 and 4

Use a trial and improvement method to find this solution.
Give your answer correct to one decimal place.
You must show **all** your working.

$x =$ .....

(Total for Question 22 is 4 marks)

TOTAL FOR PAPER IS 80 MARKS

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