Write your name here

Surname		Other names

Pearson Edexcel GCSE

Centre Number

Candidate Number

Mathematics A
Paper 2 (Calculator)

Foundation Tier

Friday 7 November 2014 – Morning	Paper Reference
Time: 1 hour 45 minutes	**1MA0/2F**

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 ▶

P 4 4 5 8 6 A 0 1 2 8

PEARSON

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

Volume of prism = area of cross section × length

1 Here is a shaded shape on a centimetre grid.
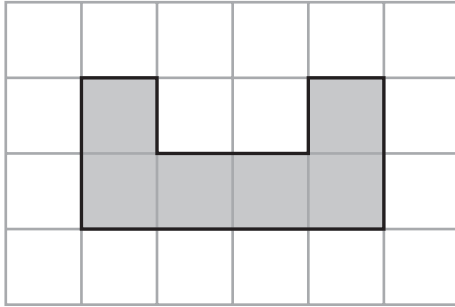
(a) Find the area of the shaded shape.

....cm²

(1)

(b) Find the perimeter of the shaded shape.

....cm

(1)

(c) On the grid below, reflect the shaded shape in the mirror line.

 — mirror line

(1)
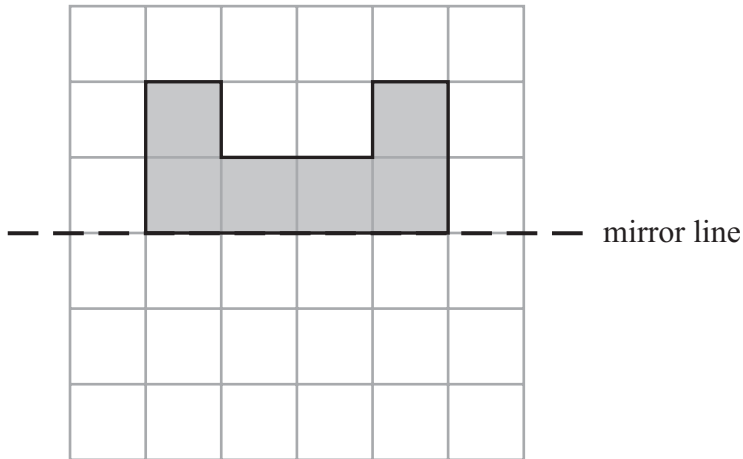
(Total for Question 1 is 3 marks)

2 The bar chart shows the number of hours of sunshine each day last week in Skegness and in Blackpool.
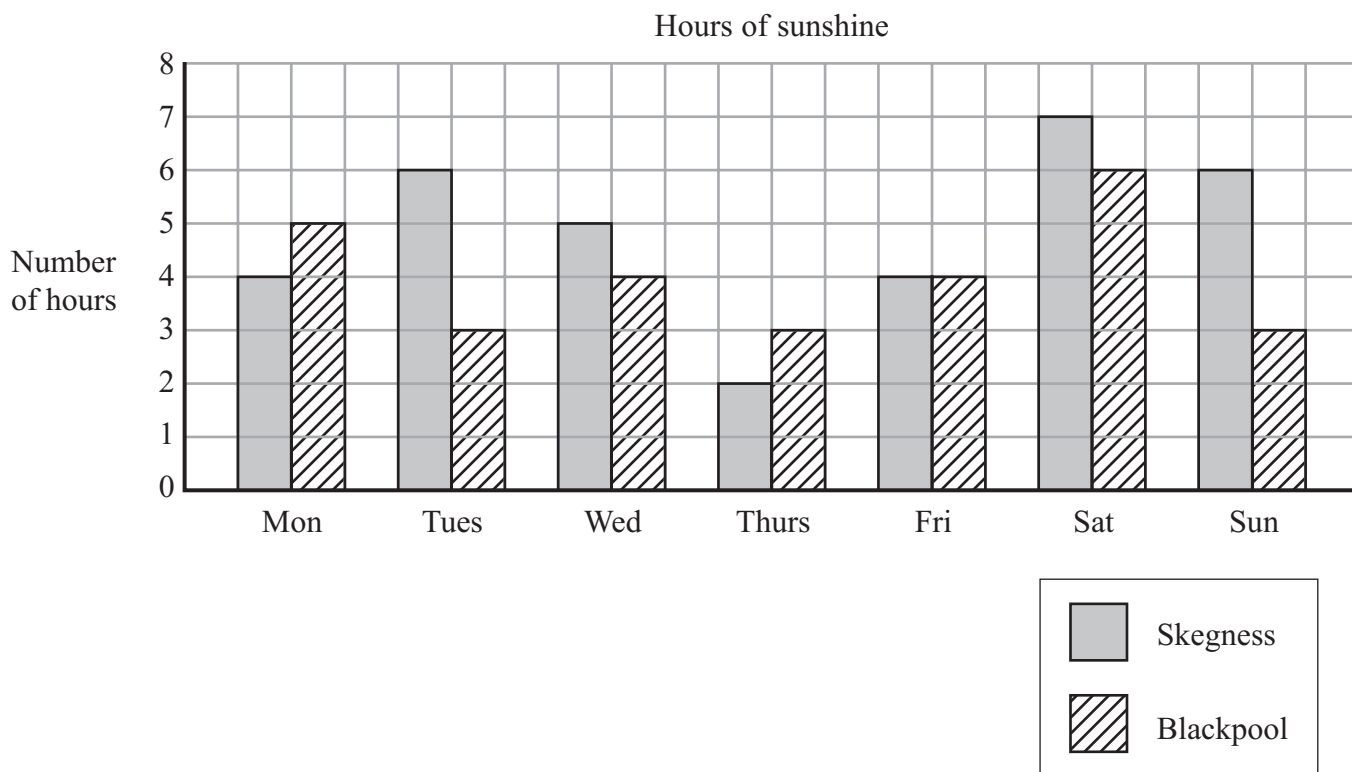
Hours of sunshine

(a) How many hours of sunshine did Skegness have on Wednesday?

....hours

(1)

(b) Blackpool had 6 hours of sunshine one day.

Which day?

....

(1)

(c) In total, Skegness had more hours of sunshine than Blackpool last week.

How many hours more?

....hours

(2)

(Total for Question 2 is 4 marks)

3 (a) Write $\dfrac{7}{10}$ as a decimal.

....

(1)

(b) Write 0.45 as a percentage.

....%

(1)

(c) Write 30% as a fraction.
Give your fraction in its simplest form.

....

(2)

(d) Write the number 2.738 correct to 2 decimal places.
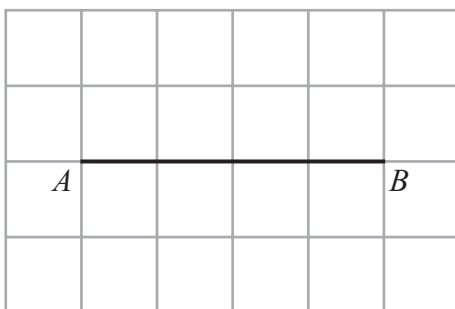
....

(1)

(Total for Question 3 is 5 marks)

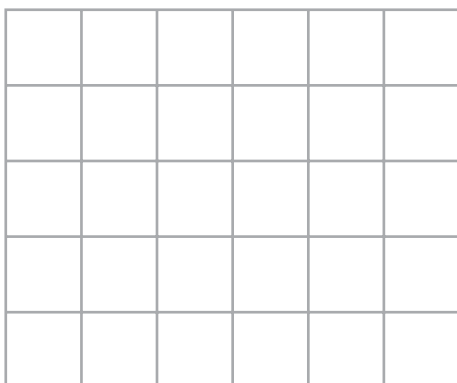**4** (a) On the grid below, draw a line that is perpendicular to the line *AB*.

(1)

(b) In the space below, draw accurately a circle of radius 4 cm.
Use the point *C* as the centre of your circle.
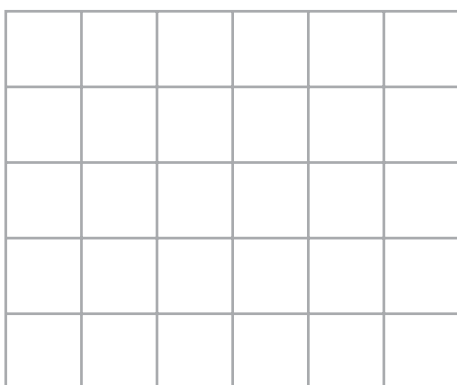
× *C*

(1)

P 4 4 5 8 6 A 0 6 2 8

(c) On the grid below, draw an isosceles triangle.

(1)

(d) On the grid below, draw a quadrilateral with exactly 2 right angles.

(1)

(Total for Question 4 is 4 marks)

5 Here is some information about flower bulbs.

Flower bulb	Planting season	Flowering season
alium	autumn	summer
amaryllis	spring	autumn
daffodil	autumn	spring
nerine	autumn	autumn
sternbergia	spring	autumn
tulip	winter	spring

(a) What is the planting season for tulip bulbs?

....

(1)

(b) Sternbergia has the same planting season as one other flower bulb.

Which flower bulb?

....
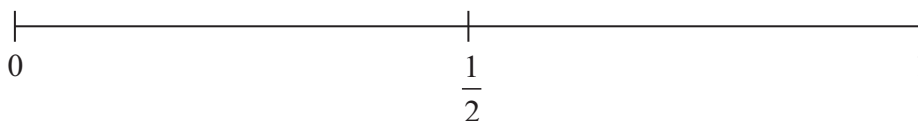
(1)

There is one of each of the six flower bulbs in a bag.

Carol takes at random a bulb from the bag.

(c) (i) On the probability scale below, mark with a cross (×) the probability that the bulb has a flowering season in winter.

```
├─────────────────────┼─────────────────────┤
0                     1                      1
                      ─
                      2
```

(ii) On the probability scale below, mark with a cross (×) the probability that the bulb has a flowering season in autumn.

```
├─────────────────────┼─────────────────────┤
0                     1                      1
                      ─
                      2
```

(2)
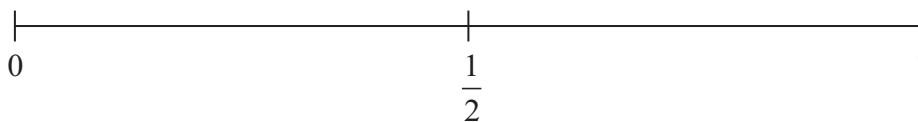
(Total for Question 5 is 4 marks)

6

Stan's Driving School	
First two lessons	£12.75 each lesson
All other lessons	£20.00 each lesson

Alex has 5 lessons with Stan's Driving School.

(a) Work out the total cost.

£..

(2)

Leah has some lessons with Stan's Driving School.
The total cost of the lessons is £305.50

(b) Work out how many lessons Leah has.

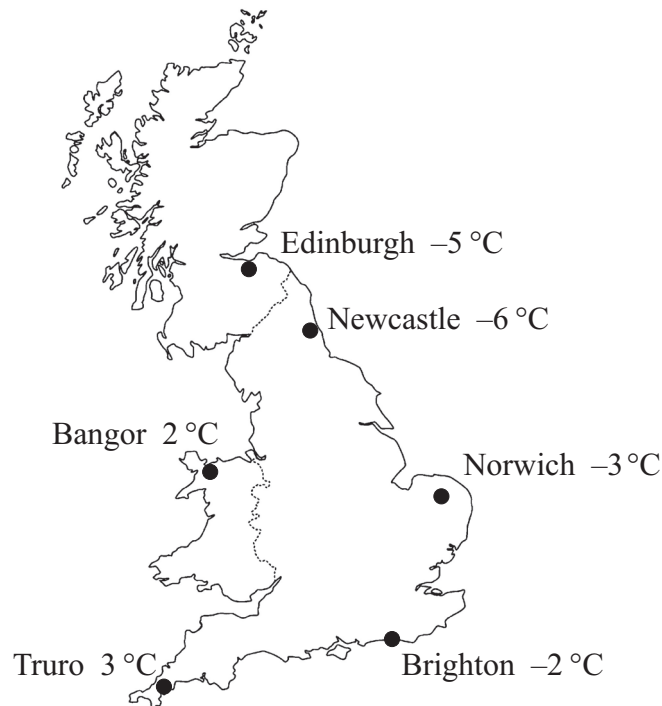..

(3)

(Total for Question 6 is 5 marks)

7 Here is a map of Great Britain.

The map shows the temperatures in some cities at midnight on 20th January.

(a) Which city had the lowest temperature at midnight?

....
(1)

In Brighton, the temperature rose by 5 °C between midnight on 20th January and midday on 21st January.

(b) What was the temperature in Brighton at midday on 21st January?

....°C
(1)

At midnight on 20th January, the temperature in Nottingham was halfway between the temperature in Truro and the temperature in Edinburgh.

(c) What was the temperature in Nottingham?

....°C
(2)

(Total for Question 7 is 4 marks)

8
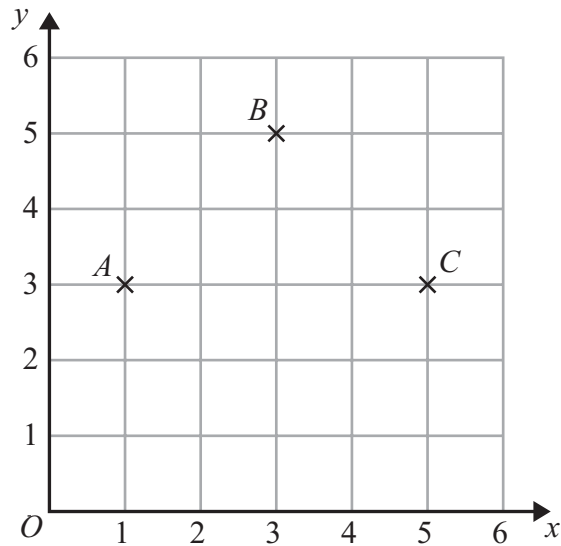
(a) Write down the coordinates of point *C*.

(.................. , ...)

(1)

(b) Write down the coordinates of the midpoint of *AB*.

(.................. , ...)

(1)

(c) On the grid, mark with a cross (×) the point *D* so that *ABCD* is a square.
Label this point *D*.

(1)

(Total for Question 8 is 3 marks)

P 4 4 5 8 6 A 0 1 1 2 8

9   Amy is making a shelf unit for her DVDs.

She needs

3 pieces of wood of length 32 cm
and   2 pieces of wood of length 45 cm.

Amy has a piece of wood of length 2 metres.
She cuts the 5 pieces of wood she needs from the 2 metre length of wood.

(a) What length of wood does Amy have left from the 2 metre length?

....

(3)

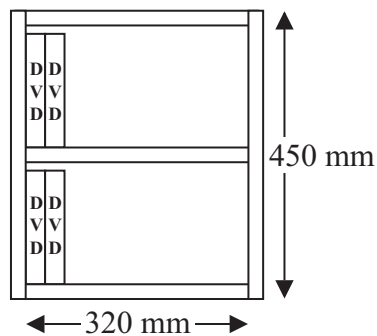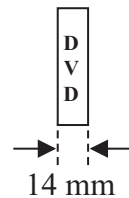The diagram shows the shelf unit.

Diagram **NOT**
accurately drawn

Amy will put DVDs on the 2 shelves, as shown in the diagram.
Each DVD has a width of 14 mm.

(b) What is the greatest number of DVDs Amy can put on the 2 shelves?

....

(3)

(Total for Question 9 is 6 marks)

10 Here is the number of goals scored by a football team in each of its first 10 games.

$$3 \quad 1 \quad 4 \quad 2 \quad 0 \quad 1 \quad 1 \quad 1 \quad 3 \quad 2$$

(a) Write down the mode.

....

(1)

(b) Work out the mean number of goals for the first 10 games.

....

(2)

In the 11th game the team scored 4 goals.
In the 12th game the team scored 2 goals.

*(c) Will the mean number of goals for the 12 games be greater than or less than
the mean number of goals for the first 10 games?
You must explain your answer.

(2)

(Total for Question 10 is 5 marks)

11 Here are parts of two train timetables.

Melton Mowbray to Peterborough				
Melton Mowbray	06 31	06 53	07 34	08 34
Oakham	06 43	07 05	07 45	08 45
Stamford	06 57	07 19	08 01	09 01
Peterborough	07 10	07 33	08 16	09 16

Peterborough to York					
Peterborough	07 05	07 45	07 58	08 15	09 15
Newark	07 37	—	08 30	08 43	09 43
Doncaster	08 09	—	09 00	09 09	10 09
York	08 31	08 50	09 27	09 32	10 32

James lives in Stamford.
He is going to a meeting in York.

James will travel by train from Stamford to Peterborough.
He will then travel by train from Peterborough to York.

It will take James 30 minutes to walk from the station in York to his meeting.

His meeting starts at 10 00

Plan a schedule for his journey to York.

Schedule	Time
Train leaves Stamford	
Train arrives in Peterborough	
Train leaves Peterborough	
Train arrives in York	
James arrives at meeting	

(Total for Question 11 is 3 marks)

12 (a) Solve $x - 5 = 17$

$x =$ ....
(1)

(b) Solve $\dfrac{m}{3} = 6$

$m =$ ....
(1)

(c) Solve $5y + 7 = 24$

$y =$ ....
(2)

(Total for Question 12 is 4 marks)

13

C

5.5 cm

Diagram **NOT** accurately drawn

35°

A

7 cm

B
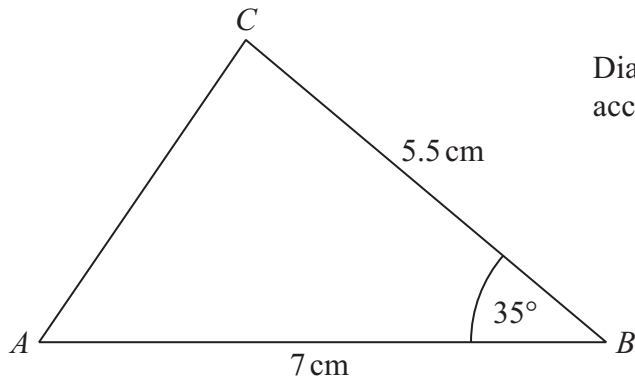
Make an accurate drawing of this triangle.
The line *AB* has been drawn for you.
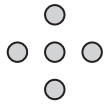
A ——————————— B

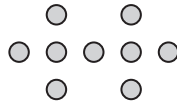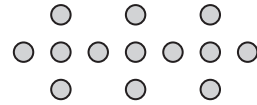**(Total for Question 13 is 2 marks)**

14 Here is a sequence of patterns made with counters.

pattern number 1   pattern number 2   pattern number 3

(a) In the space below, draw pattern number 4

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of counters	5	9	13		

(1)

(c) Find an expression, in terms of n, for the number of counters in pattern number n.

....

(2)

Habeeb has 50 counters.
He wants to use as many of his counters as possible to make a pattern in the sequence.

(d) What is the number of the pattern he can make using the greatest number of his counters?

....

(2)

(Total for Question 14 is 6 marks)

*15

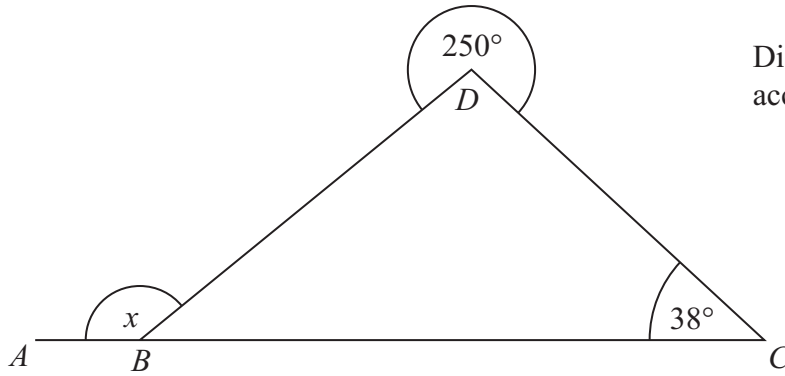Diagram **NOT** accurately drawn

ABC is a straight line.
Angle *BCD* = 38°
The reflex angle *BDC* = 250°

Work out the size of the angle marked *x*.
Give reasons for your answer.

(Total for Question 15 is 4 marks)

16 Work out the value of $\sqrt{14.44} \times (7.3 - 2.45)^2$

Write down all the figures on your calculator display.

....

(Total for Question 16 is 2 marks)

17 100 students each chose one activity.
Each student chose bowling or karting or ice skating.

The two-way table shows some information about the activities the students chose.

	Bowling	**Karting**	**Ice skating**	**Total**
Boys		13		47
Girls			34	
Total	26	20		100

(a) Complete the two-way table.

(3)

One of the boys is chosen at random.

(b) What is the probability that this boy chose karting?

....

(2)

(Total for Question 17 is 5 marks)

18 Here is a rectangle.

4 cm [rectangle]
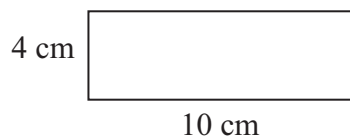
Diagram **NOT** accurately drawn

10 cm

The 12-sided shape below is made from 4 of these rectangles.
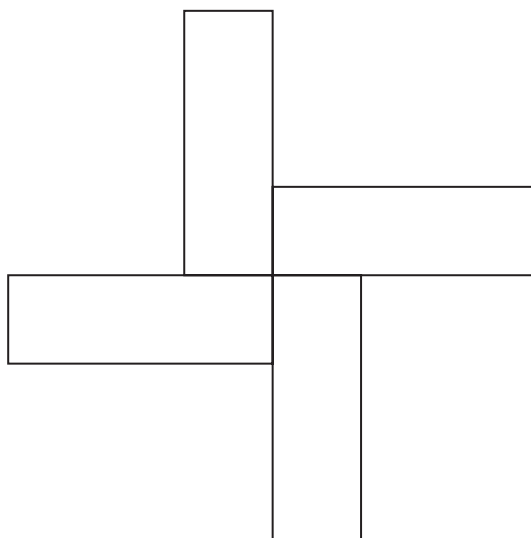
Work out the perimeter of the shape.

....cm

(Total for Question 18 is 3 marks)

19 There are 240 counters in a bag.
The counters are green or yellow or blue.

$\frac{3}{5}$ of the counters are green.

$\frac{1}{4}$ of the counters are yellow.

Work out the number of blue counters in the bag.

....

(Total for Question 19 is 4 marks)

P 4 4 5 8 6 A 0 2 1 2 8

20 Here are the ingredients needed to make 10 pancakes.

> **Pancakes**
>
> Ingredients to make **10** pancakes
>
> 300 m*l*   of milk
> 120 g   of flour
>   2   eggs

Matthew makes 30 pancakes.

(a) Work out how much flour he uses.

....g

(2)

Tara makes some pancakes.
She uses 750 m*l* of milk.

(b) Work out how many pancakes she makes.

....

(2)

(Total for Question 20 is 4 marks)

21 The scatter graph shows some information about ten pine cones from the same tree.
It shows the length and the width of each pine cone.
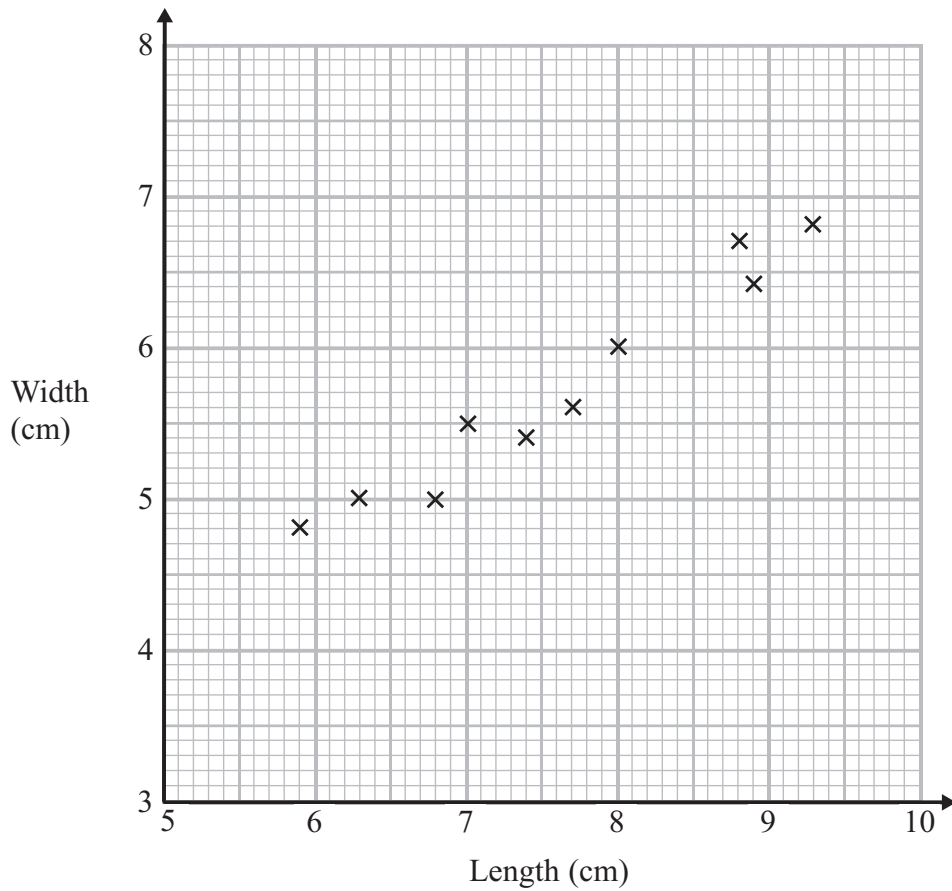
(a) Describe the relationship between the length and the width of a pine cone.

....

....

(1)

Another pine cone from this tree has a length of 8.4 cm.

(b) Estimate the width of this pine cone.

....cm

(2)

(Total for Question 21 is 3 marks)

22 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 22 is 3 marks)

23 (a) Factorise $3x + 6$

....

(1)

(b) Expand and simplify $5(y - 2) + 2(y - 3)$

....

(2)

(Total for Question 23 is 3 marks)

*24 The table gives some information about student attendance at a school on Friday.

Year	Number of students		
	Present	**Absent**	**Total**
Year 7	192	16	208
Year 8	219	22	241
Year 9	234	28	262
Year 10	233	28	261
Year 11	214	24	238

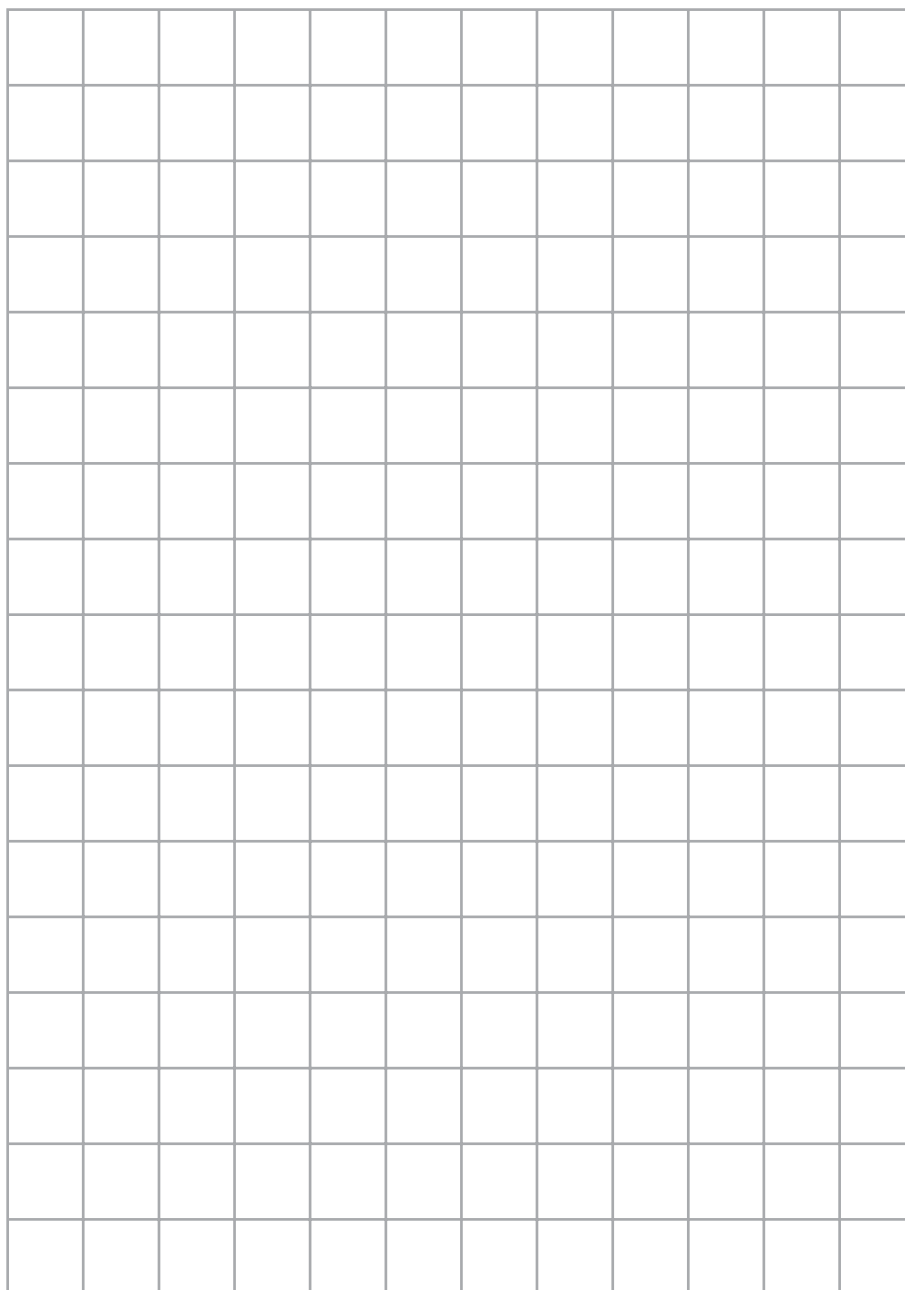The school has a target of 94% of students being present each day.

Did the school meet its target on Friday?

(Total for Question 24 is 3 marks)

Turn over ▶

25 On the grid, draw the graph of $y = 2x - 3$ for values of x from -2 to 3

(Total for Question 25 is 4 marks)

*26 Saphia is organising a conference.
People at the conference will sit at circular tables.

Diagram **NOT**
accurately drawn

Each table has a diameter of 140 cm.
Each person needs 60 cm around the circumference of the table.

There are 12 of these tables in the conference room.
A total of 90 people will be at the conference.

Are there enough tables in the conference room?

(Total for Question 26 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

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