

Write your name here

Surname

Other names

**Pearson**  
**Edexcel GCSE**

Centre Number

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Candidate Number

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# Mathematics A

**Paper 2 (Calculator)**

**Foundation Tier**

Friday 13 June 2014 – Morning

**Time: 1 hour 45 minutes**

Paper Reference

**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

|  |
|--|
|  |
|--|

# 7C



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**P43380A**

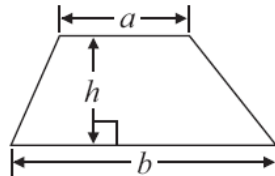
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## GCSE Mathematics 1MA0

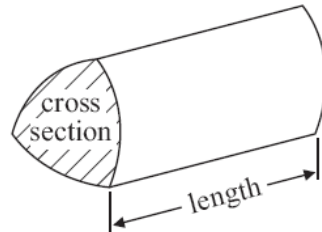
Formulae: Foundation Tier

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

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



$$\text{Volume of prism} = \text{area of cross section} \times \text{length}$$



**Answer ALL questions.**

**Write your answers in the spaces provided.**

**You must write down all stages in your working.**

1. The table shows some information about 5 students.

| <b>Name</b> | <b>Gender</b> | <b>Age</b> | <b>Favourite subject</b> |
|-------------|---------------|------------|--------------------------|
| Ella        | Female        | 16         | Science                  |
| Liam        | Male          | 15         | French                   |
| Neil        | Male          | 12         | History                  |
| Penny       | Female        | 15         | Maths                    |
| Rashida     | Female        | 14         | English                  |

- (a) Write down Liam's favourite subject.

.....  
(1)

- (b) Write down the name of the oldest student.

.....  
(1)

- (c) Write down the name of the female student who is 15 years old.

.....  
(1)

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

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2. (a) In the space below, draw a straight line 10 cm long.

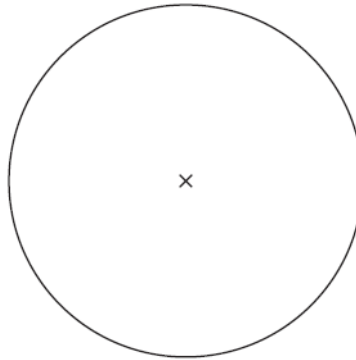
(1)

(b) Mark with a cross (×) the midpoint of the line below.



(1)

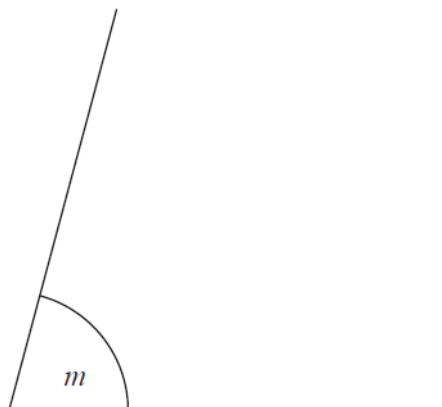
Here is a diagram of a circle, with centre marked ×.



(c) On the diagram, draw a radius of the circle.

(1)

(d) Measure the size of angle  $m$ .



.....°

(1)

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

3. Edwin goes to a restaurant with some friends.

Here are the meals they have

- 2 fish and chips at £9.25 each
- 1 chicken and chips at £9.50
- 1 roast lamb at £10.55
- 4 puddings at £4.55 each.

Edwin pays for the meals with three £20 notes.

How much change should Edwin get?

£.....

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

---

4. Work out the number that is halfway between 2.9 and 3.6.

.....

**(Total for Question 4 is 1 mark)**

---

5. 28 569 people watch a football match.

(a) Write 28 569 to the nearest hundred.

.....  
(1)

(b) Write down the value of the **2** in the number 28 569.

.....  
(1)

5619 of the 28 569 people are female.

(c) Work out the number of males.

.....  
(1)

**(Total for Question 5 is 3 marks)**

---

6. The table shows the names of five of Janette's friends.

| <b>Boys</b> | <b>Girls</b> |
|-------------|--------------|
| Dodi        | Anna         |
| James       | Michelle     |
| William     |              |

Janette is going to play a team game.  
She chooses one of the boys and one of the girls to be in her team.

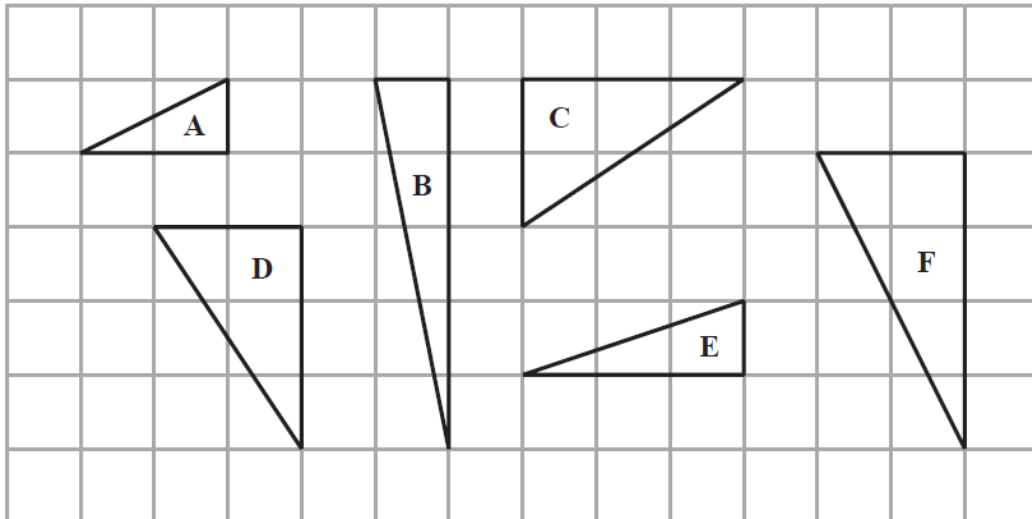
Write down all the possible combinations Janette can choose.

.....  
.....  
.....

**(Total for Question 6 is 2 marks)**

---

7. Here are some triangles drawn on a grid.



Two of the triangles are congruent.

(a) Write down the letters of these two triangles.

..... and .....  
**(1)**

One of the triangles is an enlargement of triangle A.

(b) (i) Write down the letter of this triangle.

.....

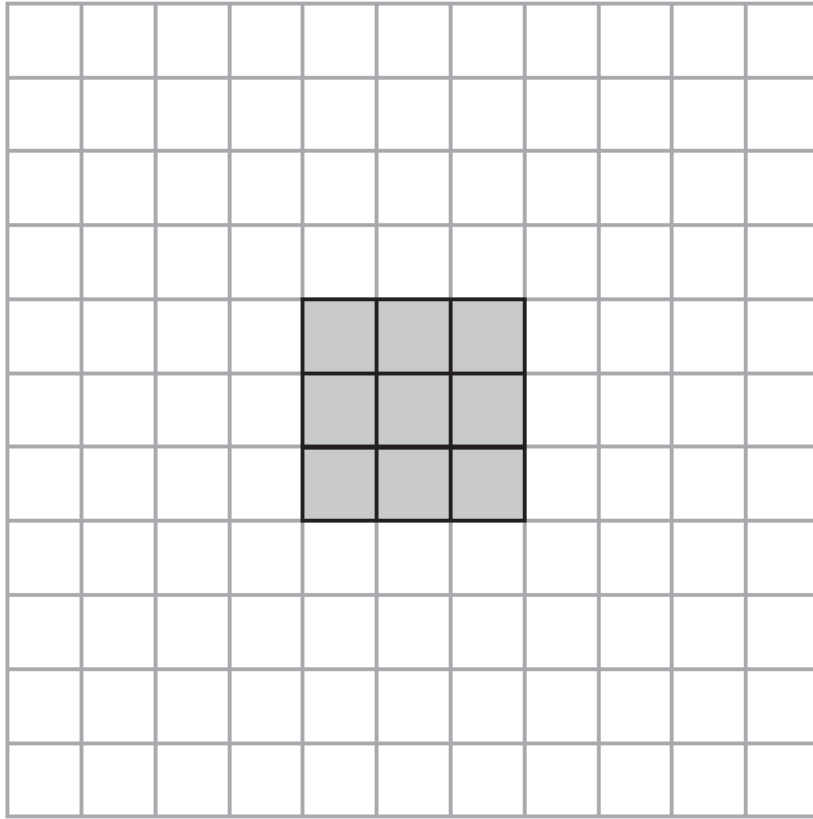
(ii) Write down the scale factor of the enlargement.

.....

**(2)**

**(Total for Question 7 is 3 marks)**

8. A square of side 3 cm is made from nine squares of side 1 cm.



- (a) How many **more** squares of side 1 cm are needed to make a square of side 6 cm?

.....  
(2)



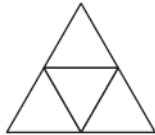
Here is a tile.



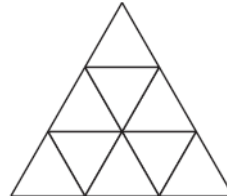
Here is a sequence of patterns made from these tiles.



Pattern number 1



Pattern number 2



Pattern number 3

(b) How many of these tiles are needed to make Pattern number 7?

.....  
(2)

**(Total for Question 8 is 4 marks)**

---

9. Sarah wants a music magazine each month for a year.

She can

pay £3.50 each month

or

pay £37.20 for the year.

Sarah pays £37.20 for the year.

How much cheaper is this than paying £3.50 each month?

£.....

**(Total for Question 9 is 3 marks)**

---

10. Here is a list of numbers.

12    19    12    15    11    15    12    13    17

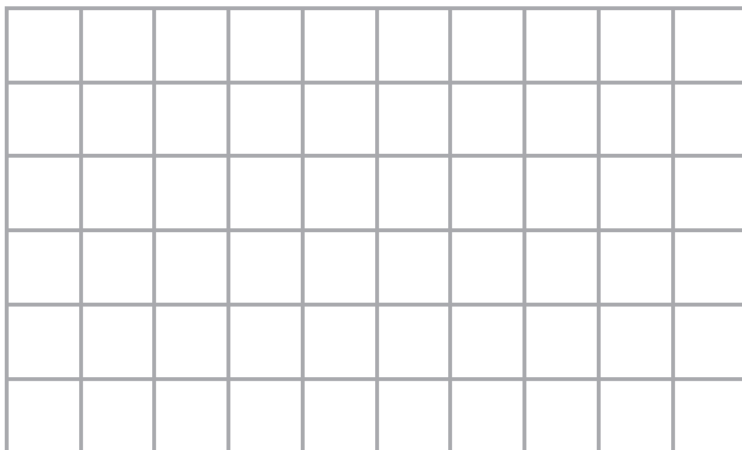
Find the median.

.....

**(Total for Question 10 is 2 marks)**

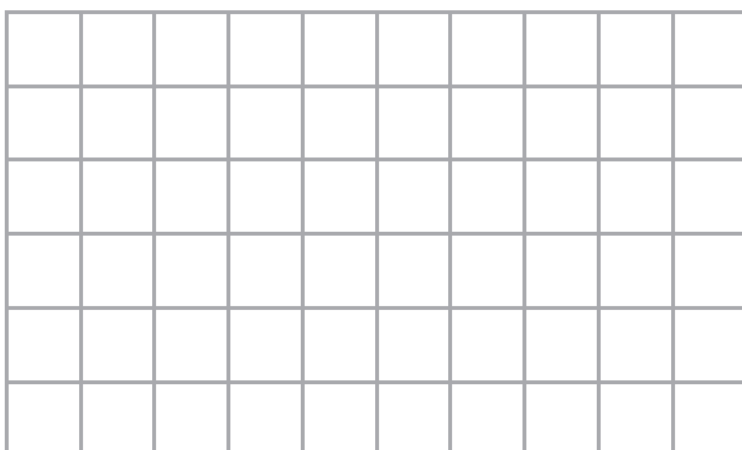
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11. (a) On the grid, draw a kite.



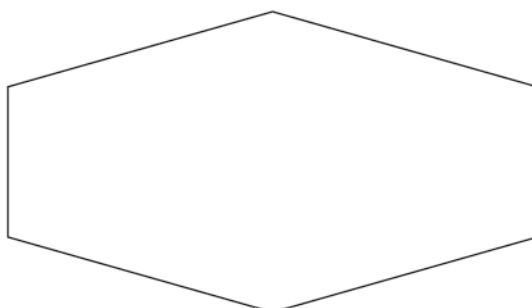
(1)

(b) On this grid, draw a rectangle with a perimeter of 14 cm.



(2)

Here is a hexagon.



(c) Draw all the lines of symmetry on this hexagon.

(2)

**(Total for Question 11 is 5 marks)**

---

**12.** Angie is organising a party for 84 adults and 42 children.

At 8pm all the adults and all the children will sit down at tables for a meal.  
6 people will sit at each table.

(a) Work out the number of seats and the number of tables Angie will need.

..... seats

..... tables

**(3)**

Each adult meal will cost £4.50.

Each child meal will cost £2.50.

Angie has £500 to pay for the meals.

(b) Does Angie have enough money to pay for the meals for 84 adults and 42 children?

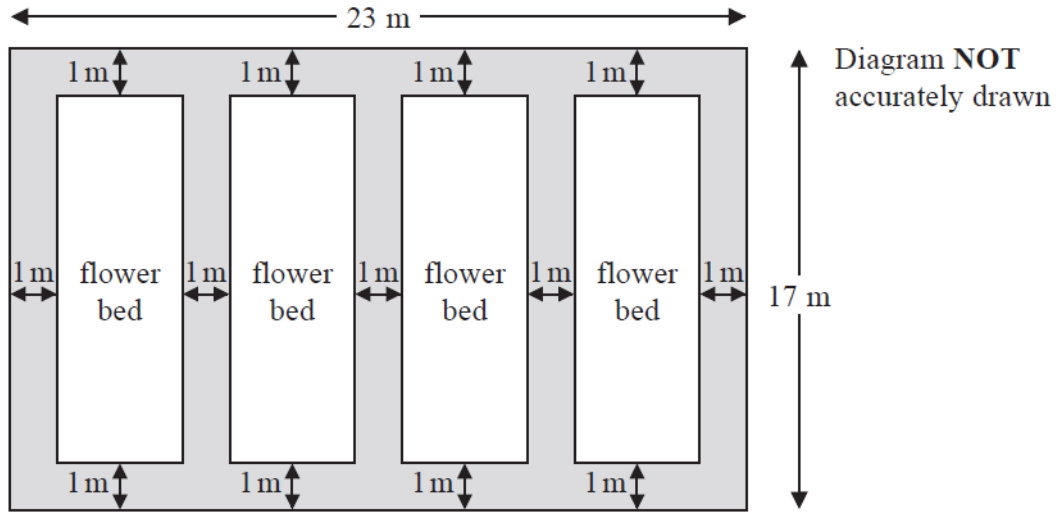
You must show all your working.

.....  
**(3)**

**(Total for Question 12 is 6 marks)**

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13. The diagram shows a garden with 4 flower beds.  
The garden is a rectangle, 23 m by 17 m.



Each flower bed is a rectangle with the same length and the same width.

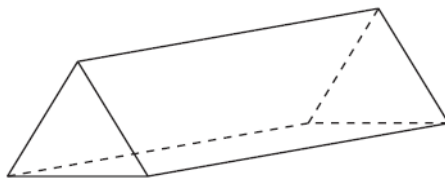
Work out the length and the width of a flower bed.

length = ..... m

width = ..... m

**(Total for Question 13 is 3 marks)**

14. Here is a triangular prism.



(a) For this prism, write down

(i) the number of edges,

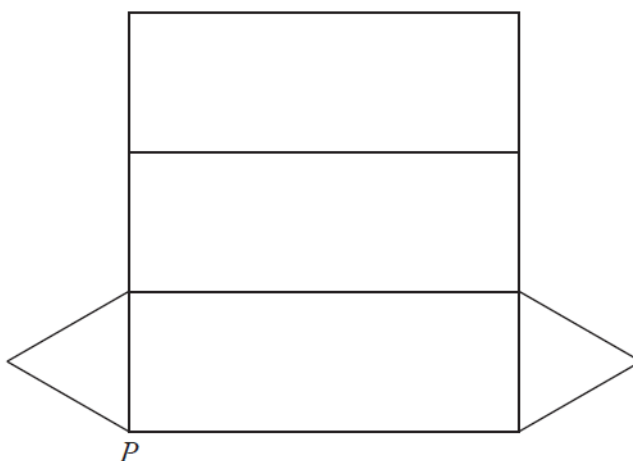
.....

(ii) the number of faces.

.....

(2)

Here is a net of the triangular prism.



The net is folded to make the prism.  
One other point meets at  $P$ .

(b) Mark this point on the net with the letter  $P$ .

(1)

(Total for Question 14 is 3 marks)

---

15. Here is a list of numbers.

2      3      4      12      13      14      15      22      24

(a) From this list, write down

(i) a factor of 6,

.....

(ii) a multiple of 6.

.....

**(2)**

Demelza says,

“All prime numbers are odd numbers”.

(b) Demelza is wrong.  
Explain why.

.....

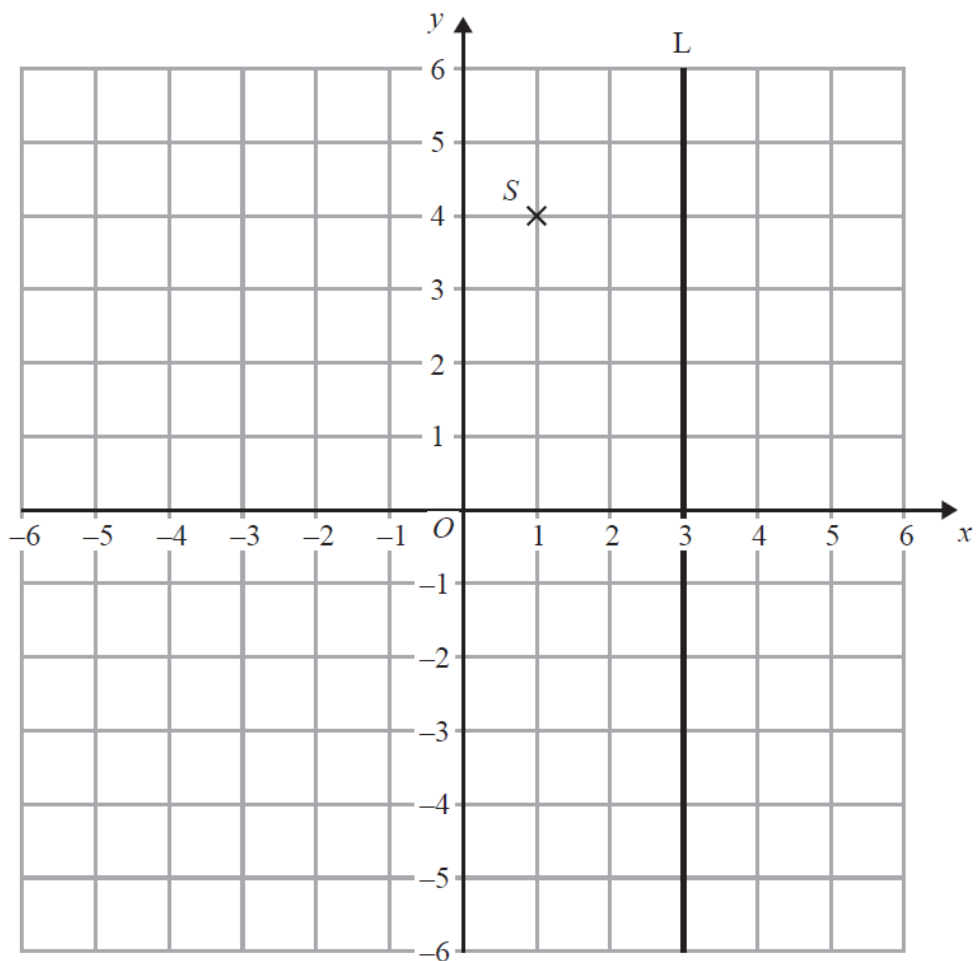
.....

**(1)**

**(Total for Question 15 is 3 marks)**

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16.



(a) Write down the coordinates of the point  $S$ .

(....., .....)  
(1)

The coordinates of the point  $T$  are  $(-3, 2)$ .

(b) On the grid, mark this point with a cross ( $\times$ ).  
Label the point  $T$ .

(1)

(c) Write down an equation of the line  $L$ .

.....  
(1)

(Total for Question 16 is 3 marks)

---



17. Chris works in a cafe.  
At noon one day he records the number of customers sitting at each table in the cafe.

Here are his results.

| Number of customers sitting at a table | Number of tables |
|--|------------------|
| 0                                      | 4                |
| 1                                      | 5                |
| 2                                      | 10               |
| 3                                      | 7                |
| 4                                      | 3                |
| 5                                      | 1                |

- (a) Work out the total number of tables in the cafe.

.....  
(1)

- (b) Work out the total number of customers sitting at tables in the cafe.

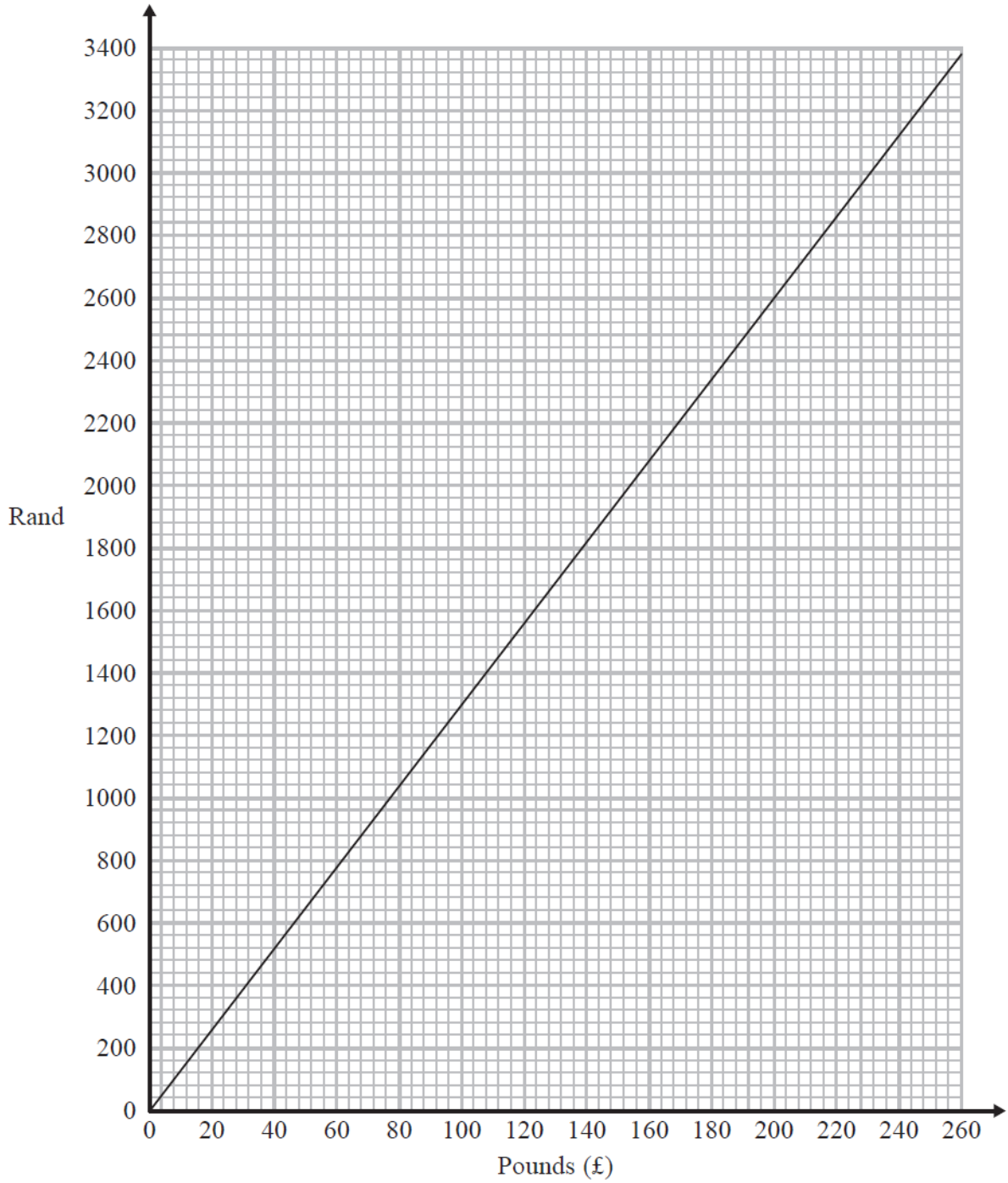
.....  
(2)

- (c) Work out the mean number of customers sitting at a table.

.....  
(2)

**(Total for Question 17 is 5 marks)**

18. Here is a conversion graph to change between UK pounds (£) and South African rand.



Jo changes £200 into rand.

(a) How many rand does she get?

..... rand  
(1)

Simon has £100 and 3700 rand.

He goes to a shop where he can spend both pounds and rand.

He wants to buy

a computer costing £360.

or

a watch costing £400

or

a camera costing £375

\*(b) Which of these items can Simon afford to buy?  
You must show clearly how you get your answer.

**(3)**

**(Total for Question 18 is 4 marks)**

---

**19.** Martin wants to find out the type of transport people use to get to work.

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

**(Total for Question 19 is 3 marks)**

---

**20.** A factory makes 1500 cans per minute.

The factory makes cans for 8 hours per day.

Each can is filled with 330 ml of cola.

How much cola is needed to fill all the cans that are made each day?

Give your answer in litres.

..... litres

**(Total for Question 20 is 4 marks)**

---

**\*21.** Here are two fractions.

$$\frac{2}{3} \qquad \frac{7}{8}$$

Which of these fractions has a value closer to  $\frac{3}{4}$ ?

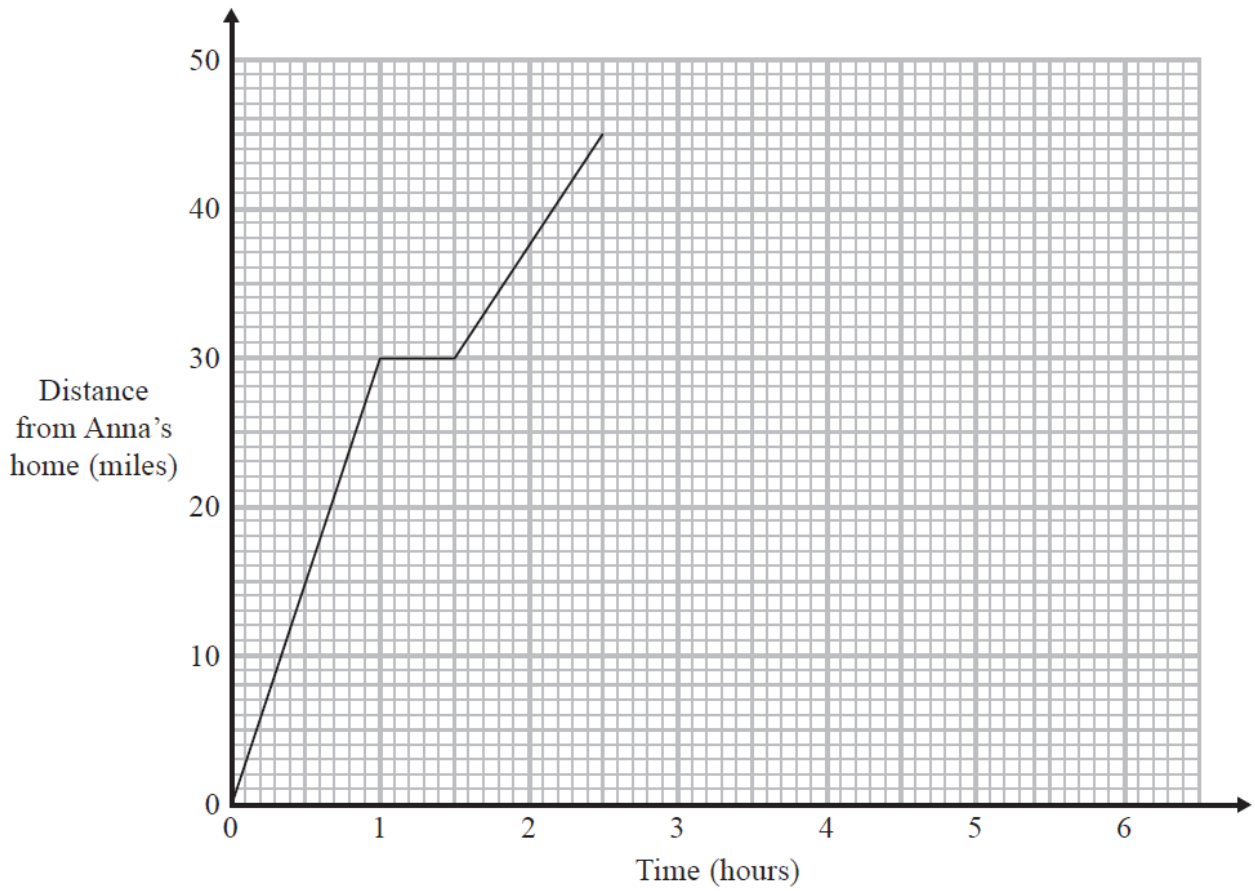
You must show clearly how you get your answer.

**(Total for Question 21 is 3 marks)**

---

22. Anna drives 45 miles from her home to a meeting.

Here is the travel graph for Anna's journey to the meeting.



Anna's meeting lasts for 1 hour.

She then drives home at a steady speed of 30 miles per hour with no stops.

Complete the travel graph to show this information.

**(Total for Question 22 is 2 marks)**

---

23. (a) Work out the value of  $3.1^4$ .

.....  
(1)

(b) Simplify  $(p^3)^2$

.....  
(1)

(c) Simplify  $\frac{t^8}{t^3}$

.....  
(1)

$$2^3 \times 2^n = 2^9$$

(d) Work out the value of  $n$ .

.....  
(1)

**(Total for Question 23 is 4 marks)**

---



**\*24.** Miss Phillips needs to decide when to have the school sports day.

The table shows the number of students who will be at the sports day on each of 4 days. It also shows the number of teachers who can help on each of the 4 days.

|                           | <b>Tuesday</b> | <b>Wednesday</b> | <b>Thursday</b> | <b>Friday</b> |
|---------------------------|----------------|------------------|-----------------|---------------|
| <b>Number of students</b> | 179            | 162              | 170             | 143           |
| <b>Number of teachers</b> | 15             | 13               | 14              | 12            |

For every 12 students at the sports day there must be at least 1 teacher to help.

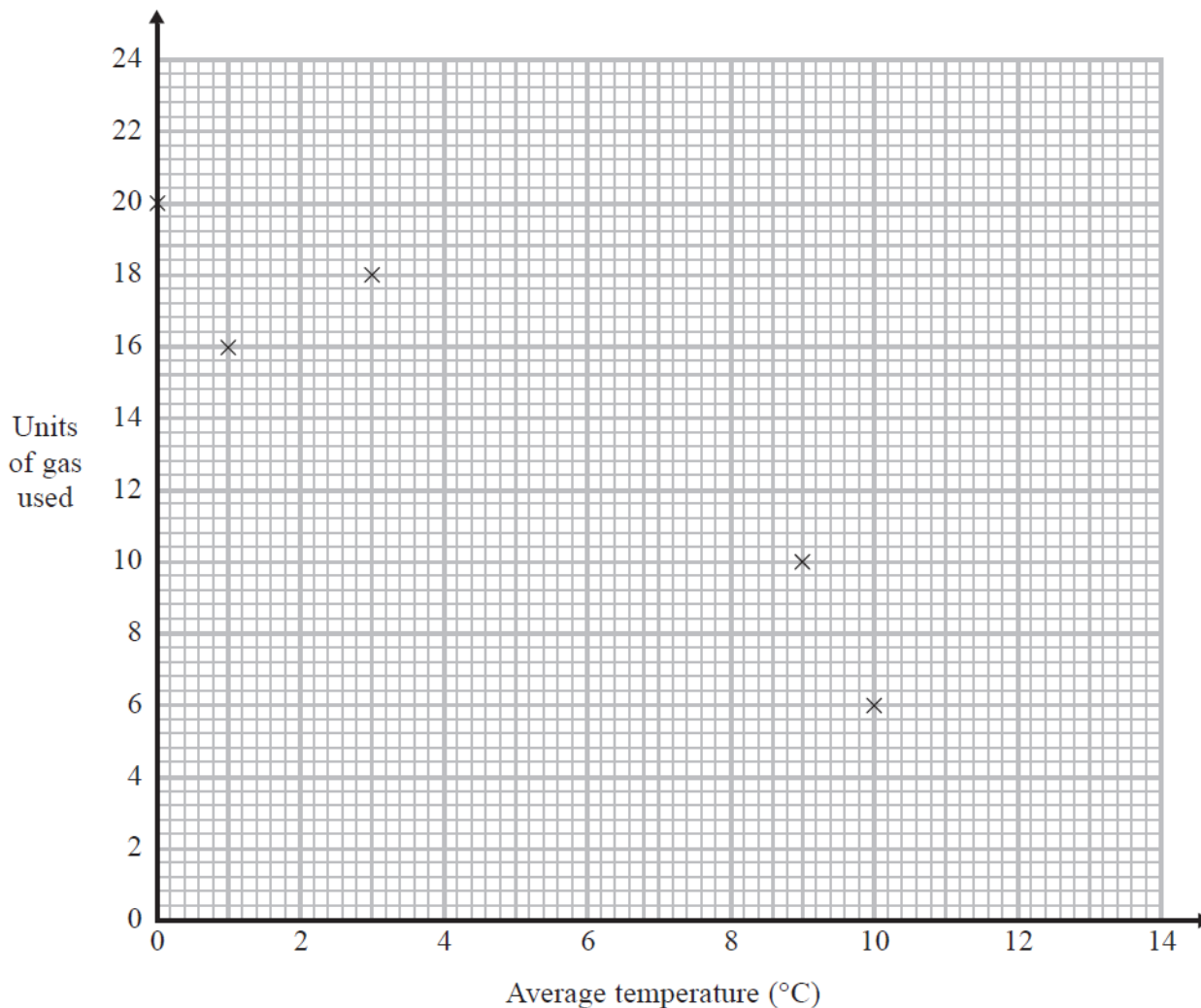
On which of these days will there be enough teachers to help at the sports day?  
You must show all your working.

**(Total for Question 24 is 3 marks)**

---

25. The table shows the average temperature on each of seven days and the number of units of gas used to heat a house on these days.

|  |    |    |    |    |    |    |    |
|--|----|----|----|----|----|----|----|
| Average temperature ( $^{\circ}\text{C}$ ) | 0  | 1  | 3  | 9  | 10 | 12 | 13 |
| Units of gas used                          | 20 | 16 | 18 | 10 | 6  | 6  | 2  |



- (a) Complete the scatter graph to show the information in the table.  
The first 5 points have been plotted for you.

(1)

- (b) Describe the relationship between the average temperature and the number of units of gas used.

.....  
.....

(1)

(c) Estimate the average temperature on a day when 12 units of gas are used.

..... °C  
(2)

**(Total for Question 25 is 4 marks)**

---

26. (a) Solve  $3p + 4 = 6$

.....  
(2)

$$-5 < y \leq 0$$

$y$  is an integer.

(b) Write down all the possible values of  $y$ .

.....  
(2)

**(Total for Question 26 is 4 marks)**

---

27.  $x = 0.7$

Work out the value of  $\frac{(x+1)^2}{2x}$ .

Write down all the figures on your calculator display.

.....  
**(Total for Question 27 is 2 marks)**

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28. The diagram shows a trapezium.

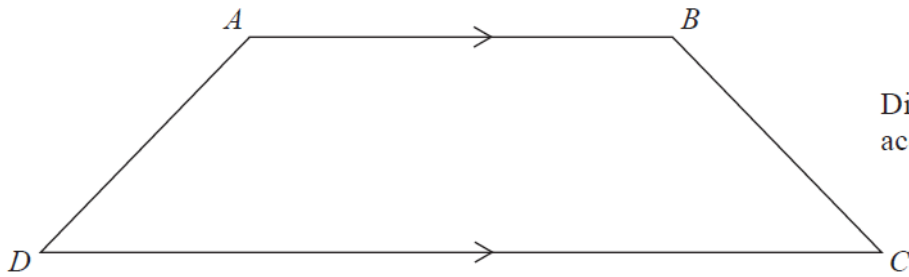


Diagram **NOT** accurately drawn

$AD = x$  cm.

$BC$  is the same length as  $AD$ .

$AB$  is twice the length of  $AD$ .

$DC$  is 4 cm longer than  $AB$ .

The perimeter of the trapezium is 38 cm.

Work out the length of  $AD$ .

..... cm

**(Total for Question 28 is 4 marks)**

---

29. Here is a right-angled triangle.

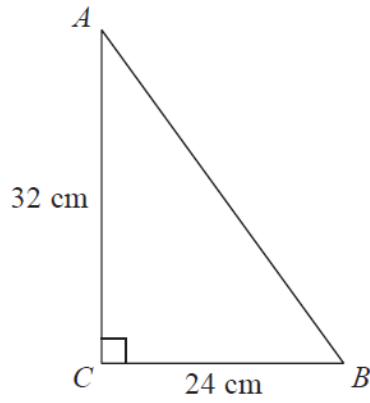
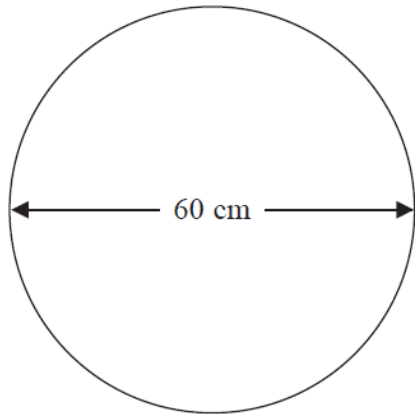


Diagram **NOT**  
accurately drawn

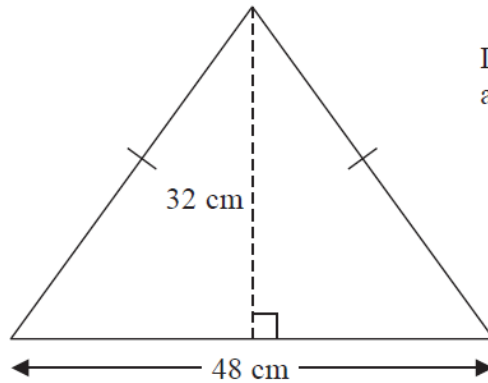
(a) Work out the length of  $AB$ .

..... cm  
(3)

Inderpal is making two mirrors.



Mirror A



Mirror B

Diagram **NOT** accurately drawn

Mirror **A** is in the shape of a circle.  
This mirror has a diameter of 60 cm.

Mirror **B** is in the shape of an isosceles triangle.  
This mirror has base 48 cm and height 32 cm.

Inderpal buys metal strips to put around the edge of each mirror.  
The metal strip is sold in lengths of one metre.  
Each one metre length of metal strip costs £5.68.

- (b) Work out the total amount Inderpal pays.  
You must show all your working.

£.....  
(4)

(Total for Question 29 is 7 marks)

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**TOTAL FOR PAPER IS 100 MARKS**