

Surname	Centre Number	Candidate Number
Other Names		0



GCSE

4370/03

**MATHEMATICS – LINEAR
PAPER 1
FOUNDATION TIER**

A.M. TUESDAY, 6 November 2012

$1\frac{3}{4}$ hours

**CALCULATORS ARE
NOT TO BE USED
FOR THIS PAPER**

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** the questions in the spaces provided.

Take π as 3.14.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

Scale drawing solutions will not be acceptable where you are asked to calculate.

The number of marks is given in brackets at the end of each question or part-question.

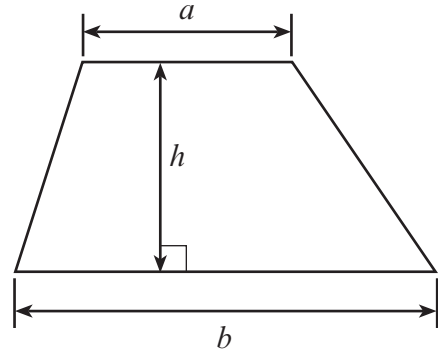
You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question 6.

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1	9	
2	9	
3	4	
4	9	
5	6	
6	7	
7	4	
8	4	
9	8	
10	6	
11	6	
12	5	
13	9	
14	7	
15	3	
16	4	
TOTAL MARK		

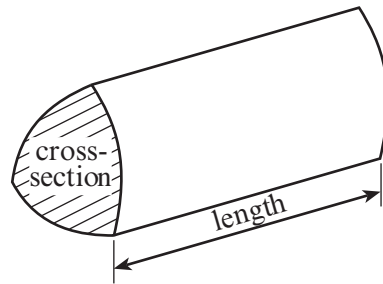
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Formula List

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



Volume of prism = area of cross-section \times length



1. (a) (i) A car manufacturer sells six thousand, five hundred and eighty three cars. Write down this number in figures.

[1]

- (ii) The weekly sales for a local newspaper is 13 406.
Write down this number in words.

[1]

- (b) Add together 85 and 97.

[1]

- (c) Find $428 - 119$.

[1]

- (d) Write down a multiple of 8 that is between 70 and 79.

[1]

- (e) Write 8736

- (i) correct to the nearest 10,

[1]

- (ii) correct to the nearest 100.

[1]

- (f) Write down all the factors of 16.

[2]

2. (a) Write down the value of the 8 in the number 18 623.

[1]

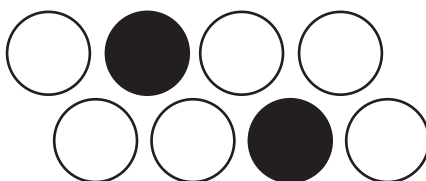
- (b) Write down a square number that is less than 100 and has a tens digit of 8.

[1]

- (c) Tom has a £10 note and a £5 note.
He buys 10 packs of cards and has £1 left over.
What is the cost of 1 pack of cards?

[3]

- (d) What percentage of the discs are black?



[1]

- (e) **Showing all your working**, find an **estimate** for the value of 74.6×99.7 .

[2]

- (f) Write down the smallest prime number that is greater than 20.

[1]

3. The formula for the profit (in £) made by selling printers is

$$\text{profit} = \text{number sold} \times 24 - \text{outlay}$$

- (a) Find the **profit** when the **number sold** is 20 and the **outlay** is £150.

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[2]

- (b) On another occasion, a **profit** of £180 is made when the **number sold** is 10.
Find the **outlay**.

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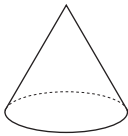
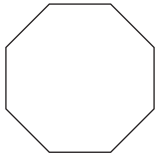
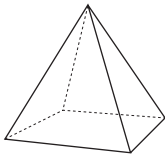
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[2]

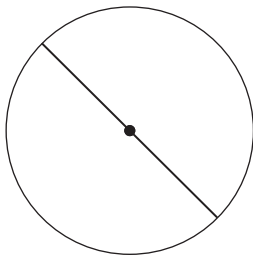
4. (a) Write down the special name of each of the following figures.

[3]

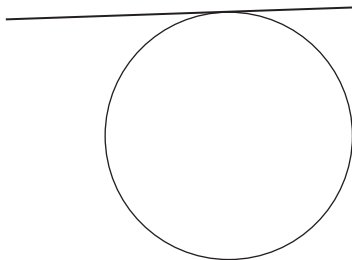
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- (b) Write down the special name of the straight line shown in each of the following diagrams.

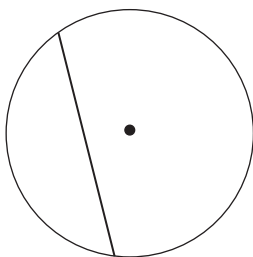
[3]



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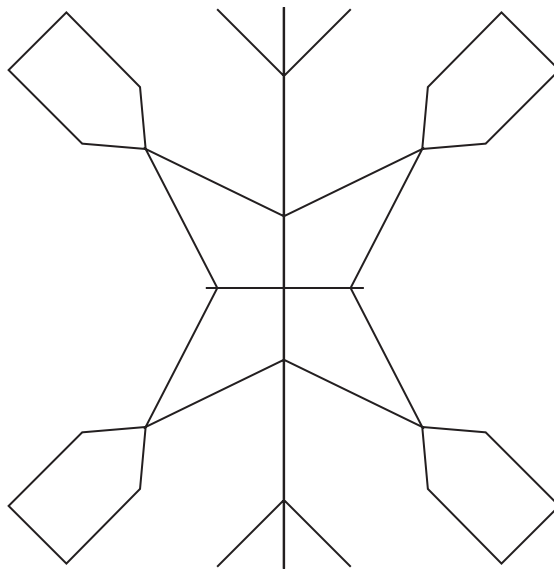
(c) Draw **all** the lines of symmetry on each of the following patterns.

[3]

(i)



(ii)



5. Three identical rectangles, each 10 cm by 2 cm, are placed to make the shape shown in the diagram.

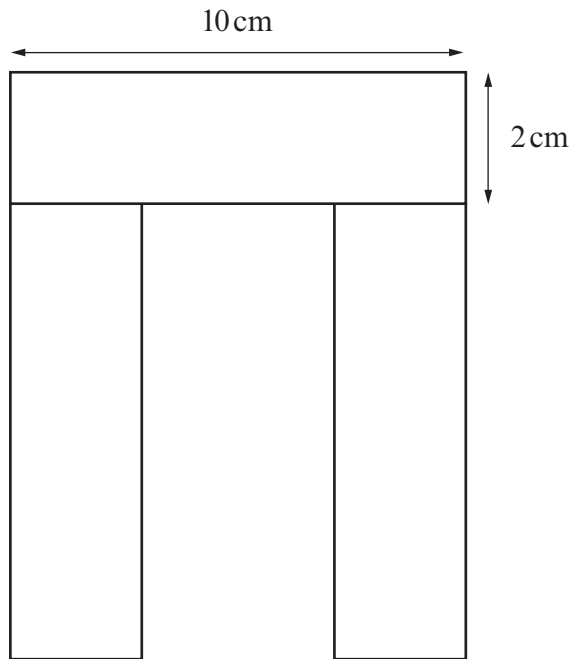


Diagram not drawn to scale

- (a) Calculate the perimeter of the shape.

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[3]

- (b) Calculate the area of the shape.
Write down the units of your answer.

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[3]

6. *You will be assessed on the quality of your written communication in this question.*

Year 11 pupils have been asked to estimate the cost for each pupil to go to a concert.

There are 98 pupils in Year 11.

A packed lunch for each pupil costs £3.95.

The total cost of tickets to the concert is £915.

The buses cost £290.

ESTIMATE the cost per pupil of the trip, to the nearest pound.

You must show all your working.

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[7]

7. The following table shows, for five different places,
- the temperatures at midday on 2 different days,
 - the change of temperature between the 2 days.
- Complete the table.

Place	Temperature on day 1	Temperature on day 2	Change in temperature
Bangor	−4	2	up 6
Toronto	3	−2	
Glasgow	−1		down 3
Moscow	−2	−6	
Reykjavik		−5	up 2

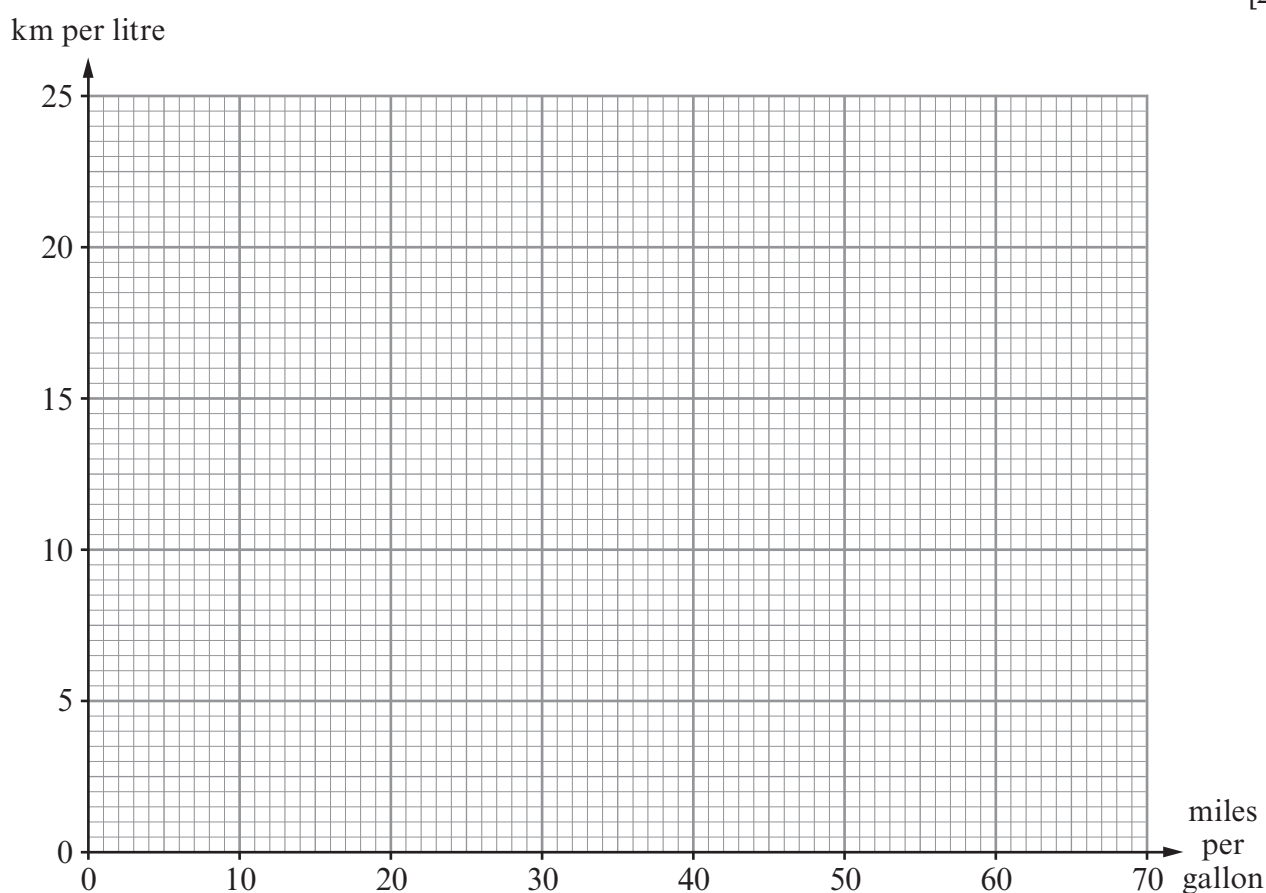
[4]

8. (a) The fuel consumption of vehicles can be measured in miles per gallon or in kilometres per litre.
The table shows 3 different values for the consumption in miles per gallon and the corresponding 3 values in kilometres per litre.

Miles per gallon	13	35	60
Kilometres per litre	4.6	12.4	21.2

Use the data in the table to draw a conversion graph between miles per gallon and kilometres per litre.

[2]



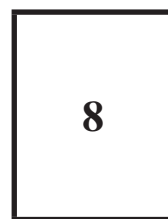
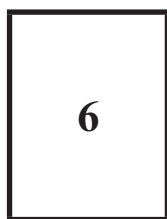
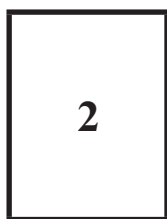
- (b) Find an estimate, in miles per gallon, for 40 kilometres per litre.

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[2]

9. There are two packs of cards. One pack is coloured red and the other pack is coloured blue. The red pack has four cards numbered



The blue pack has four cards numbered



In a game, a player chooses one card at random from the red pack and one card at random from the blue pack. The player's score is the difference between the two numbers.

For example, if the number on the red card is 8 and the number on the blue card is 5, the player works out $8 - 5 = 3$ and the player scores 3.

Similarly, if the number on the red card is 2 and the number on the blue card is 3, the player works out $3 - 2 = 1$ and the player scores 1.

- (a) Complete the following table to show all the possible scores.

Blue pack	7	.....	.....	1	1
	5	.....	.....	1	3
	3	1	1	.....	.....
	1	1	3	.....	.....
		2	4	6	8
		Red pack			

[2]

- (b) A player wins a prize by getting a score of 1.
It costs 50p to play the game once.
The prize for winning the game is 80p.
When 320 people play the game once, find the expected profit.

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[6]

10. (a) Find the size of the angle marked x .

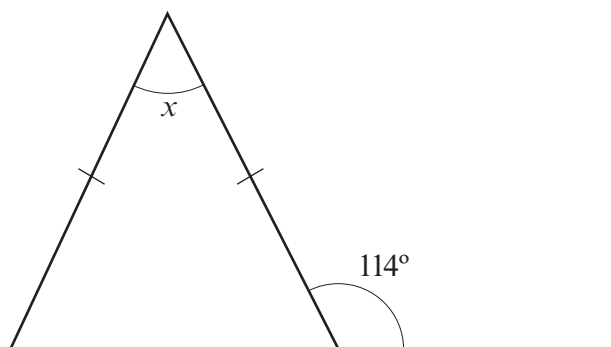


Diagram not drawn to scale

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$$x = \text{.....}^{\circ}$$

[3]

- (b) Find the size of the angle marked y .

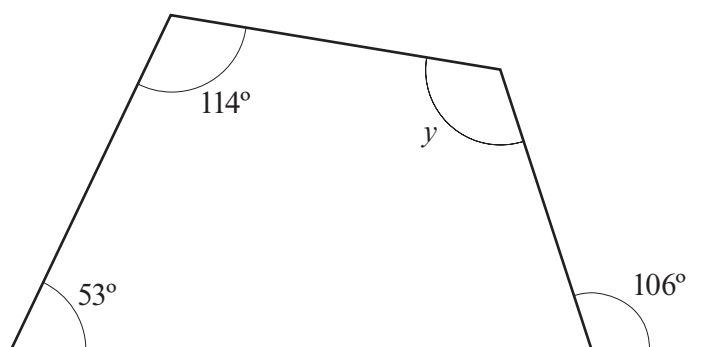


Diagram not drawn to scale

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$$y = \text{.....}^{\circ}$$

[3]

11. The diagram shows 2 identical rectangles and 2 identical parallelograms. The coordinates of four vertices are shown on the diagram.

Find the coordinates of the vertices marked A , B and C .

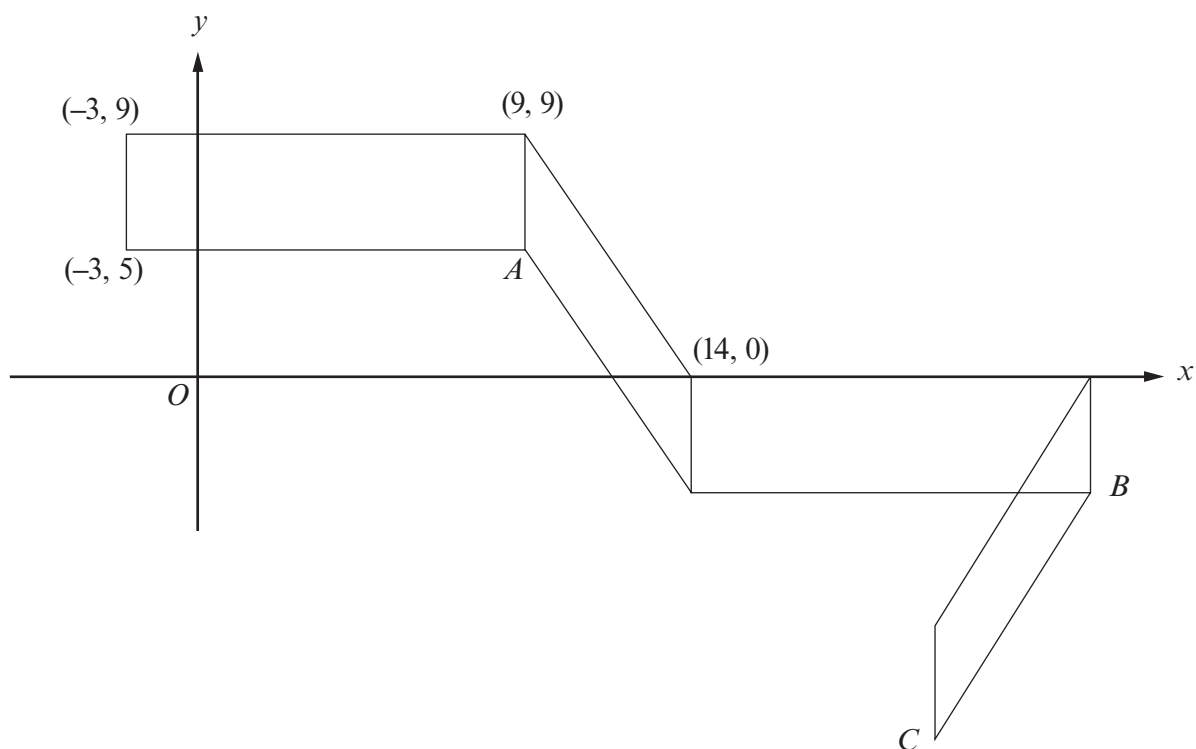


Diagram not drawn to scale

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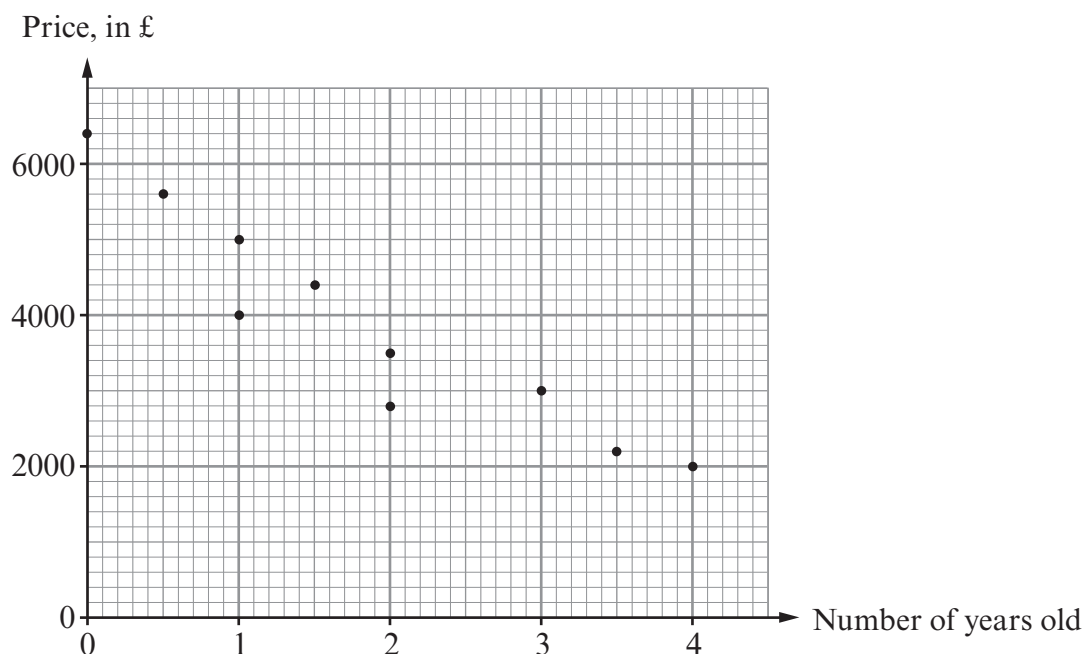
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A (..... ,) B (..... ,) C (..... ,)

[6]

12. The scatter diagram shows the price and age for each of 10 cars of the same make and model.



- (a) Write down the price of the new car.

[1]

- (b) Write down the price of the oldest car.

[1]

- (c) Draw, by eye, a line of best fit on the scatter diagram.

[1]

- (d) Write down the type of correlation shown by the scatter diagram.

[1]

- (e) Estimate the price of a $2\frac{1}{2}$ year old car of the same make and model.

[1]

13. (a) Factorise $24x + 3$.

[1]

(b) Factorise $x^2 - 6x$.

[1]

(c) Expand $2x(x^3 + 6)$.

[2]

(d) Solve $\frac{x}{3} + 15 = 25$.

[2]

(e) Solve $5x - 7 = 3(x + 2)$.

[3]

- A street party is being organised using the community hall's tables and chairs. Tables are joined and placed in a long straight line. Tables meet edge to edge to form the line.

(b) There are n people sitting around a straight line of tables.
There are no empty seats.
Write an expression in terms of n for the least number of tables needed to seat these people.

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15. Roz and Simon each throw a fair dice.
Calculate the probability that the sum of the two numbers obtained is 4.

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[3]

16. Seven **single digit numbers** have a median of 6 and a range of 8.
The mode of the seven numbers is 3.
Find the seven numbers.
Write your single digit numbers in order in the boxes.

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[4]