

Write your name here

Surname

Mr Thompson

Other names

**Pearson**  
**Edexcel GCSE**

Centre Number

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Candidate Number

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# Mathematics A

**Paper 2 (Calculator)**

Solutions

**Foundation Tier**

Friday 8 November 2013 – 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

## 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  $\pi$  button, take the value of  $\pi$  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 ►

P44023A

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5/4/5/2/



P 4 4 0 2 3 A 0 1 2 8

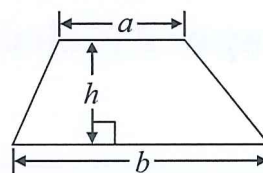
**PEARSON**

GCSE Mathematics 1MA0

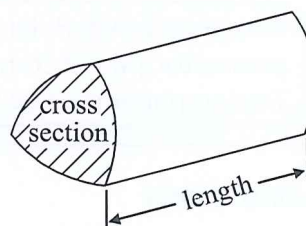
Formulae: Foundation Tier

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

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 (a) Write the number **three thousand five hundred and two** in figures.

3502

(1)

- (b) Write the number 2019 in words.

Two thousand and nineteen

(1)

- (c) Write down the value of the 7 in the number 4571

7 tens

(1)

- (d) Write 6718 correct to the nearest hundred.

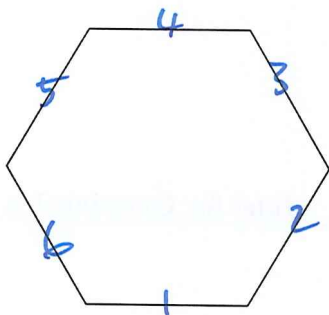
6700

(1)

(Total for Question 1 is 4 marks)

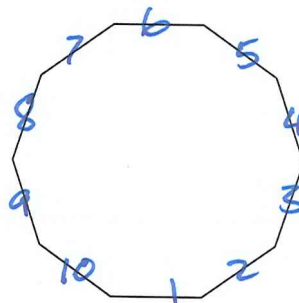
- 2 Write down the mathematical name of each of these polygons.

(i)



Hexagon

(ii)



Decagon

(Total for Question 2 is 2 marks)



P 4 4 0 2 3 A 0 3 2 8

- 3 The table shows some information about seven different mobile phones.

Mobile phone	Price (£)	Weight (g)	Camera	Music player	Radio
Sonsang A125	40	88	yes	yes	yes
Sonsang A220	25	95	no	no	yes
Sonsang A335	10	102	no	no	no
PK 340	42	92	yes	yes	yes
PK 390	35	100	no	yes	yes
Nota M1	25	90	yes	yes	no
Nota M8	38	77	yes	yes	yes

- (a) Write down the name of the most expensive mobile phone.

PK 340

(1)

- (b) Write down the price of the cheapest mobile phone that has a music player and a radio.

£ 35

(1)

- (c) Work out the difference between the weight of the heaviest mobile phone and the weight of the lightest mobile phone.

102 - 77

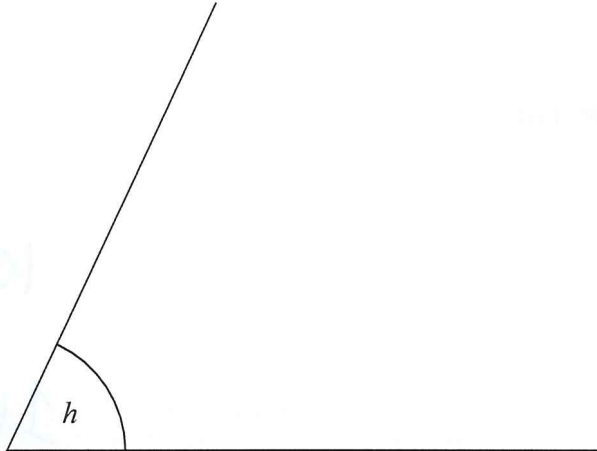
25

(2)

(Total for Question 3 is 4 marks)







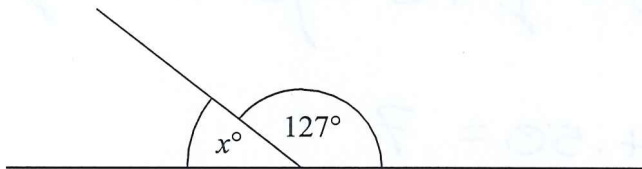
- (a) (i) What type of angle is angle  $h$ ?

Acute

- (ii) Measure the size of angle  $h$ .

65°  
(2)

Diagram NOT  
accurately drawn



- (b) (i) Work out the value of  $x$ .

$x =$  53°

- (ii) Give a reason for your answer.

Angles on a straight line add up to  
180°. 180 - 127 = 53°

(2)

(Total for Question 4 is 4 marks)



- 5 A film starts at 17 50  
The film ends at 19 30

(a) How long does the film last?

100 mins  
or  
1 hour 40 mins  
(2)

Jackie buys some tickets to see the film.

Each ticket costs £4.50

Jackie pays with two £20 notes.

Jackie gets £8.50 change.

(b) How many tickets did Jackie buy?

$$2 \times £20 = £40 - £8.50 = £31.50$$

$$31.50 \div 4.50 = 7$$

7  
(3)

(Total for Question 5 is 5 marks)



6 Here are the first five terms of a number sequence.

40      37      34      31      28

(a) (i) Write down the next two terms of this number sequence.

25, 22

(ii) Explain how you got your answer.

Subtract 3 from the previous term.

(2)

Here are the first five terms of a different number sequence.

1      2      3      4      5      6      7      8  
-12      -7      -2      3      8      13      18      23

(b) Find the 8th term of this sequence.

23

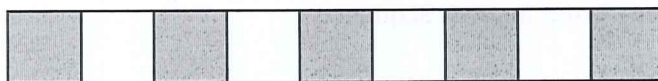
(2)

(Total for Question 6 is 4 marks)



P 4 4 0 2 3 A 0 7 2 8

7



(a) Write down the fraction of this shape that is shaded.

$\frac{5}{9}$

(1)

(b) Shade 30% of this shape.



(1)

(c) Work out  $\frac{2}{3}$  of 120 kg.

$$\frac{1}{3} = 40 \quad \frac{2}{3} = 80$$

80

kg

(2)

(Total for Question 7 is 4 marks)





- \*8 Lev counts the number of bicycles and the number of motorbikes he sees on each of five mornings.

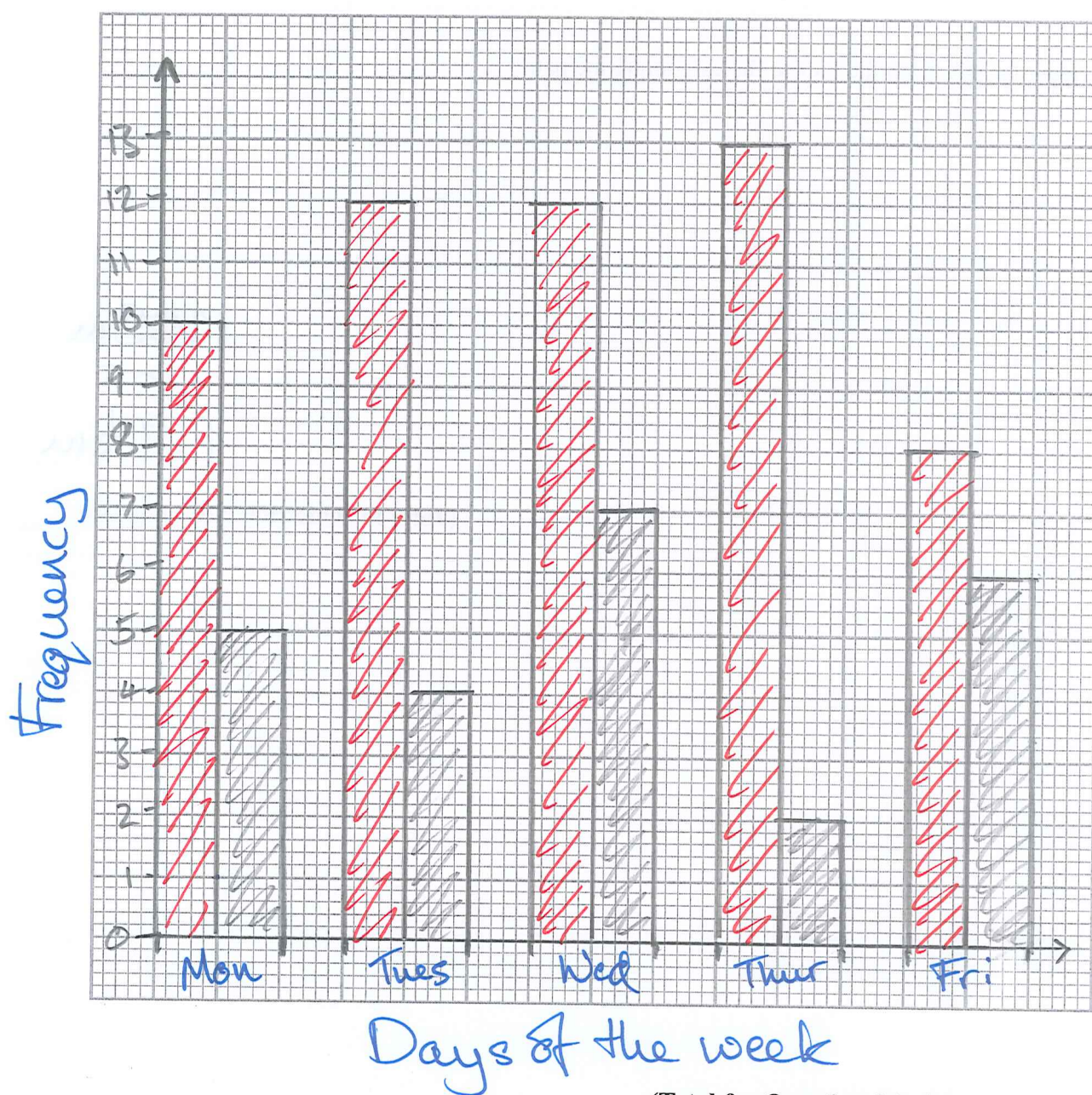
The table shows his results.

	Monday	Tuesday	Wednesday	Thursday	Friday
Bicycles	10	12	12	13	8
Motorbikes	5	4	7	2	6

Lev wants to compare this information.

On the grid, draw a suitable chart or diagram.

 Bicycles  
 Motorbikes

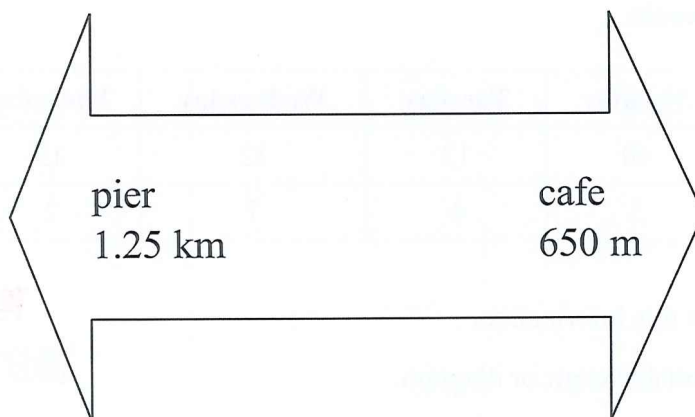


(Total for Question 8 is 4 marks)



P 4 4 0 2 3 A 0 9 2 8

- 9 John is walking along a path.  
He sees this sign.



How far is it from the pier to the cafe along the path?

1900m  
or  
1.9km

(Total for Question 9 is 3 marks)



10 Here is a number machine.



Complete this table for the number machine.

$$12 \div 4 = 3 \quad +7 = 10$$
$$27 - 7 = 20 \quad \times 4 = 80$$

Input	Output
8	9
12	10
80	27

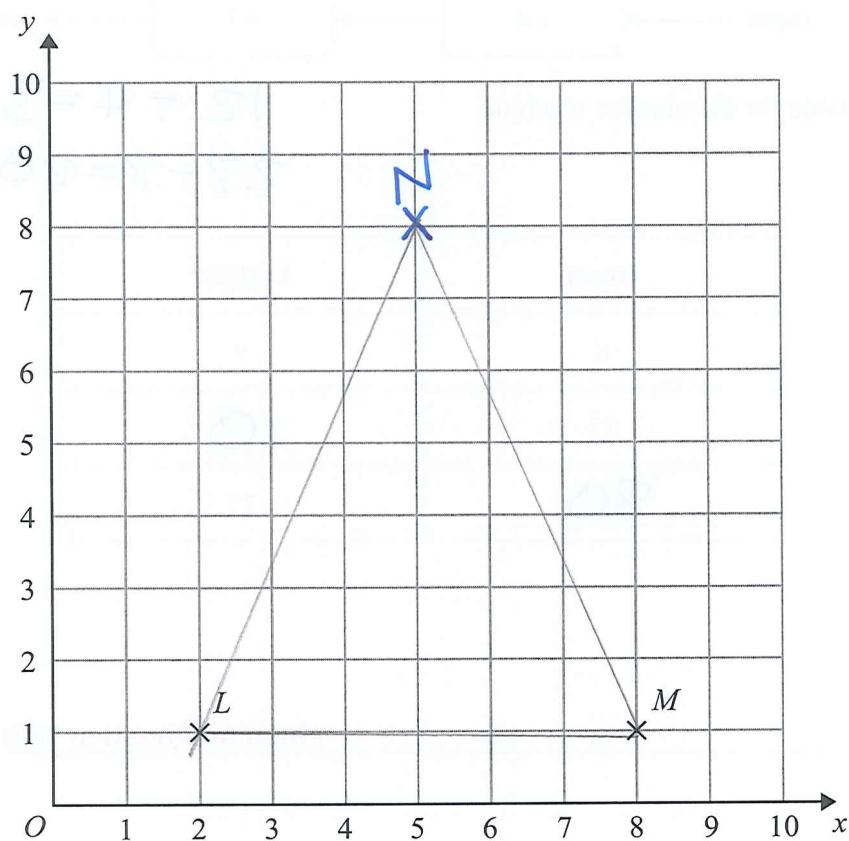
(Total for Question 10 is 2 marks)



P 4 4 0 2 3 A 0 1 1 2 8



11 Here is a coordinate grid.



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

(8, 1)  
(1)

$LM$  is the shortest side of an isosceles triangle.

(b) Mark with a cross ( $\times$ ) a point  $N$ , so that  $LMN$  is an isosceles triangle.

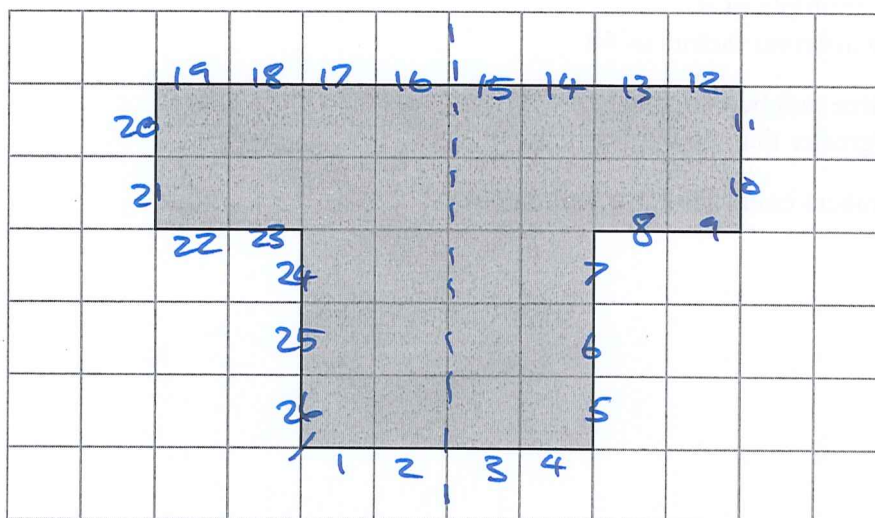
(2)

(Total for Question 11 is 3 marks)





12 Here is a shaded shape drawn on a centimetre grid.



(a) How many lines of symmetry does the shaded shape have?

1  
(1)

(b) Find the perimeter of the shaded shape.

26 cm  
(1)

Here is a rectangle.

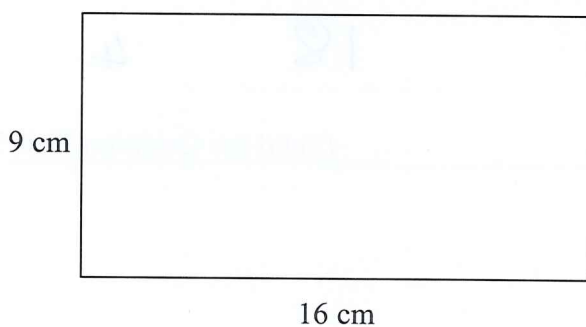


Diagram NOT  
accurately drawn

(c) Work out the area of this rectangle.

$$9 \times 16 = 144$$

144 cm<sup>2</sup>  
(2)

(Total for Question 12 is 4 marks)



P 4 4 0 2 3 A 0 1 3 2 8

13 Jan writes down

one multiple of 9  
two different factors of 40

Jan adds her three numbers together.  
The answer is greater than 20 but less than 30

What three numbers could Jan have written down?

18      4      5

(Total for Question 13 is 3 marks)



14 Vicky counts the number of birds in her garden at 8 am on each of 10 days.

5    3    3    2    0    2    4    2    4    15

(a) Write down the mode.

*most common*

2  
(1)

(b) Work out the mean.

*40 ← sum of numbers*  
*10 ← how many there are*

4  
(2)

Vicky counts the number of birds in her garden at 5 pm on each of 20 days. She records the information in a frequency table.

Number of birds	Frequency	<i>fx</i>
0	3	<u>0</u>
1	2	<u>2</u>
2	3	<u>6</u>
3	4	<u>12</u>
4	5	<u>20</u>
5	3	<u>15</u>

*total → 55*

(c) Work out the total number of birds Vicky records in the frequency table.

55  
(2)

(Total for Question 14 is 5 marks)



P 4 4 0 2 3 A 0 1 5 2 8

- \*15 Brian makes egg cups.  
He makes 12 egg cups per hour.

Brian makes egg cups for  $4\frac{1}{2}$  hours each day, on 5 days of the week.

The egg cups are packed in boxes.  
8 egg cups are packed into each box.

How many boxes are needed for all the egg cups Brian makes in 5 days?

$$12 \times 4.5 = 54$$

$$54 \times 5 = 270$$

↑  
Number of  
eggs

$$270 \div 8 = 33.75$$

↑  
Number of boxes

Brian needs 34 egg cup boxes.

---

(Total for Question 15 is 4 marks)





likely

impossible

certain

evens

unlikely

(a) Use a word from the box which best describes the probability of each of the following events.

(i) When you throw an ordinary coin you get a tail.

Evens

(ii) When you throw an ordinary dice you get a number less than 7

Certain

(2)

Bill has some counters in a bag.

3 of the counters are red.

7 of the counters are blue.

The rest of the counters are yellow.

Bill takes at random a counter from the bag.

The probability that he takes a yellow counter is  $\frac{2}{7}$

(b) How many yellow counters are in the bag before Bill takes a counter?

3 red

$\frac{3}{14}$

7 blue

$\frac{7}{14}$

yellow  $\rightarrow \frac{2}{7} \rightarrow \frac{4}{14}$

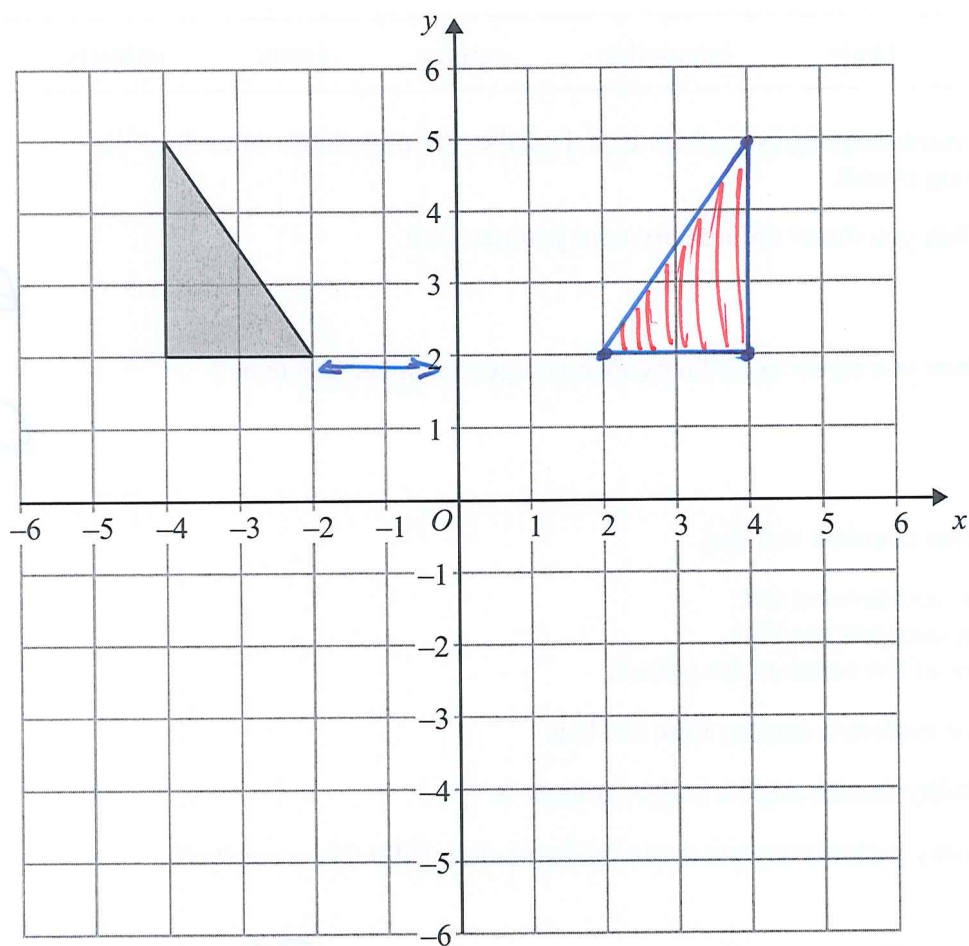
4

(2)

(Total for Question 16 is 4 marks)



17

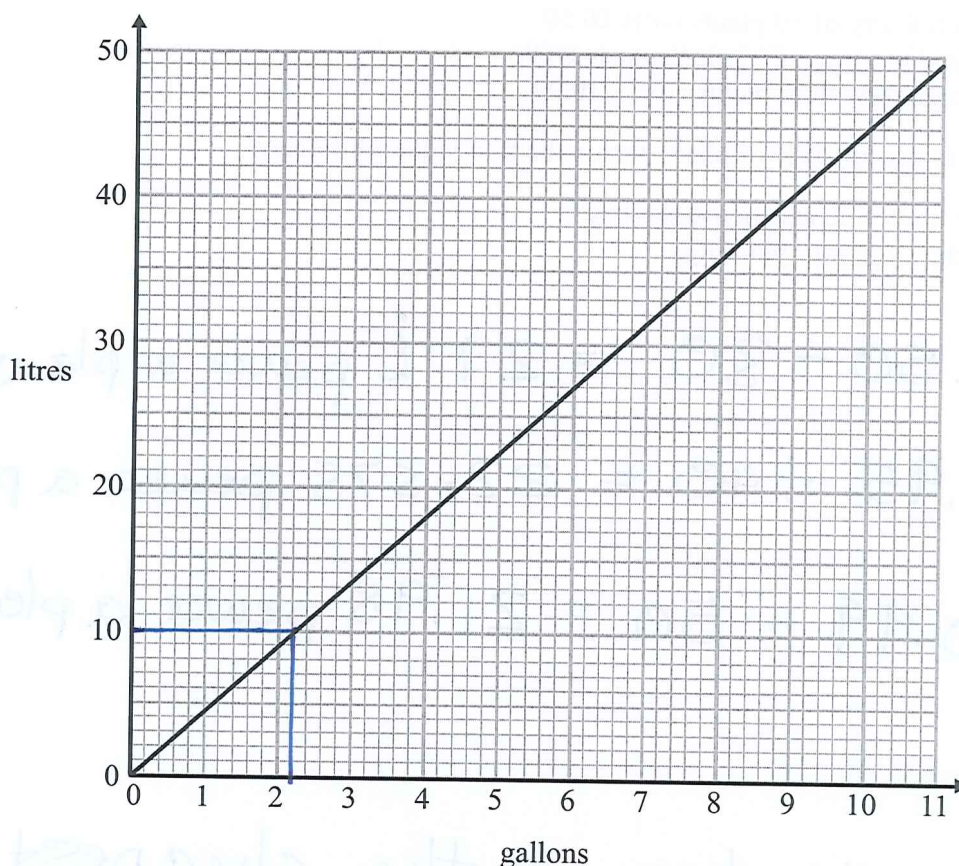


Reflect the shaded triangle in the  $y$ -axis.

(Total for Question 17 is 2 marks)



18 You can use this graph to change between gallons and litres.



There are 80 litres of petrol in the petrol tank of car A. *17.6 gallons*  
 There are 16 gallons of petrol in the petrol tank of car B.

Which car has the most petrol in its petrol tank?  
 You must show all your working.

$$10 \text{ Litres} = 2.2 \text{ gallons}$$

$$80 \text{ Litres} = 17.6 \text{ gallons}$$

*A has the most petrol at 17.6 gallons compared to B at 16 gallons*

(Total for Question 18 is 3 marks)





\*19 Plants are sold in three different sizes of tray.

A small tray of 30 plants costs £6.50

A medium tray of 40 plants costs £8.95

A large tray of 50 plants costs £10.99

Kaz wants to buy the tray of plants that is the best value for money.

Which size tray of plants should she buy?

You must show all your working.

$$\textcircled{S} \quad 6.50 \div 30 = 21.\dot{6} \text{ pence a plant}$$

$$\textcircled{M} \quad 8.95 \div 40 = 22.375 \text{ pence a plant}$$

$$\textcircled{L} \quad 10.99 \div 50 = 21.98 \text{ pence a plant}$$

Small tray is the cheapest  
and best value tray of  
plants at 21.6 pence per  
plant.

(Total for Question 19 is 4 marks)





20 Pat has  $x$  cards.

Jim has 4 more cards than Pat.

(i) Write down an expression, in terms of  $x$ , for the number of cards Jim has.

$$x + 4$$

Lex has 2 times as many cards as Pat.

(ii) Write down an expression, in terms of  $x$ , for the number of cards Lex has.

$$2x$$

(Total for Question 20 is 2 marks)

21 Linda is buying wool to knit a baby's blanket.  
She needs 1800 yards of wool.

Linda chooses some balls of wool.

There are 245 metres of wool in each ball of wool.

Linda knows that

1 yard is 36 inches

1 inch is 2.54 centimetres

How many balls of wool does Linda need to buy?  
You must show all your working.

$$1800 \text{ yards} = 64,800 \text{ inches}$$

$$64,800 \text{ inches} = 164,592 \text{ cm}$$

$$164,592 \text{ cm} = 1,645.92 \text{ m}$$

$$1,645.92 \text{ m} \div 245 = 6.718 \dots$$

7

$$7$$

(Total for Question 21 is 4 marks)



P 4 4 0 2 3 A 0 2 1 2 8

22 (a) Use your calculator to work out  $5.9^2$

34.81

(1)

(b) (i) Use your calculator to work out  $\sqrt{500} + 12.8$

Write down all the figures on your calculator display.  
You must give your answer as a decimal.

35.16067977

(ii) Write your answer to part (i) correct to 1 decimal place.

35.2

(2)

(Total for Question 22 is 3 marks)

23 (a) Solve  $e + e + e + e + e = 45$

$$5e = 45$$

$$e = 9$$

(1)

(b) Solve  $18 - x = 13$

$$\begin{array}{r} +x \quad +x \\ 18 = 13 + x \\ -13 \quad -13 \\ \hline 5 = x \end{array}$$

$$x = 5$$

(1)

(c) Solve  $2(y - 5) = 24$

$$\begin{array}{r} 2y - 10 = 24 \\ +10 \quad +10 \\ \hline 2y = 34 \\ \div 2 \quad \div 2 \\ \hline y = 17 \end{array}$$

$$y = 17$$

(2)

(d) Factorise  $15p + 40$

$$5(3p + 8)$$

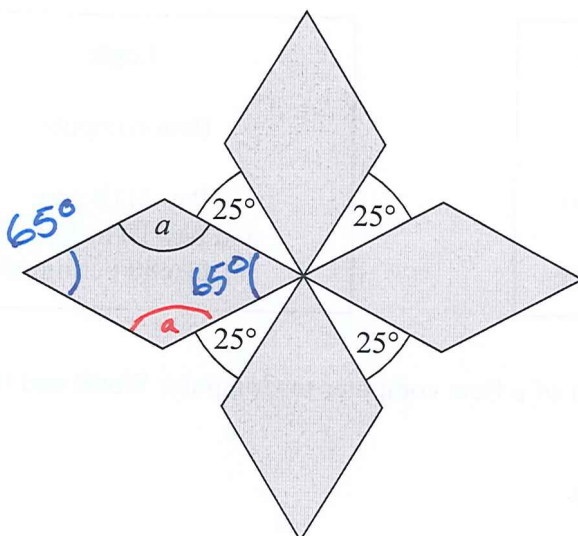
(1)

(Total for Question 23 is 5 marks)



24 The diagram shows a pattern using four identical rhombuses.

Diagram NOT  
accurately drawn



Work out the size of the angle marked  $a$ .  
You must show your working.

Sum of angles in a parallelogram

$$25 \times 4 = 100$$

$$360 - 100 = 260$$

$$260 \div 4 = 65$$

↓

$$360 - (65 \times 2)$$

$$360 - 130 = 230$$

$$230 \div 2 = 115^\circ$$

115°

(Total for Question 24 is 4 marks)



P 4 4 0 2 3 A 0 2 3 2 8

25 The same type of computer is sold in two shops.

Computer World
Beta computer
Normal price : £359
15% off normal price

Logic
Beta computer
Pay £110 now and pay 12 instalments of £16.80 per month

What is the difference in the cost of a Beta computer in Computer World and the cost of a Beta computer in Logic?

You must show all your working.

$$359 \times 0.85 = 305.15$$

$$110 + 12 \times 16.80 = 311.60$$

$$311.60 - 305.15 = 6.45$$

£ 6.45

(Total for Question 25 is 5 marks)





- 26 There are 130 adults at a language school.  
Each adult studies one of French or Spanish or German.

96 of the adults are women.  
12 of the women study French.  
73 of the adults study Spanish.  
55 of the women study Spanish.  
9 of the men study German.

How many of the adults study French?

	French	Spanish	German	Total
women	12	55	29	96
men	7	18	9	34
total	19	73	38	130

19

(Total for Question 26 is 4 marks)



P 4 4 0 2 3 A 0 2 5 2 8



27 A circle has a diameter of 140 cm.

Work out the circumference of the circle.

Give your answer correct to 3 significant figures.

$$C = \pi d$$

$$C = \pi \times 140$$

$$C = 439.8229715$$

440 cm

(Total for Question 27 is 2 marks)



\*28 Axel and Lethna are driving along a motorway.

They see a road sign.

The road sign shows the distance to Junction 8

It also shows the average time drivers will take to get to Junction 8

To Junction 8

30 miles  
26 minutes

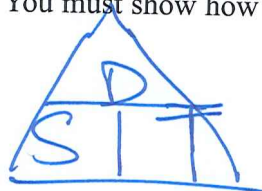
The speed limit on the motorway is 70 mph.

Lethna says,

'We will have to drive faster than the speed limit to go 30 miles in 26 minutes.'

Is Lethna right?

You must show how you got your answer.



$$\frac{30 \text{ miles}}{? \mid 26 \text{ mins}}$$

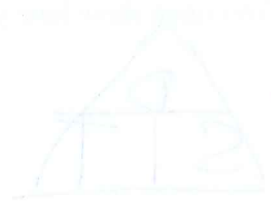
$$\begin{aligned} S &= 1.153846 \text{ mi/min} \\ \times 60 \quad \hookrightarrow \quad S &= 69.230769 \text{ mi/hour} \end{aligned}$$

No they will not have to drive faster than the speed limit, they will drive at 69.3 mph.

(Total for Question 28 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS





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