Write your name here

Surname	Other names
	Answers

Pearson Edexcel GCSE

Centre Number | | | | | |

Candidate Number | | | | |

Mathematics A

Paper 1 (Non-Calculator)

Foundation Tier

Wednesday 6 November 2013 – Morning
Time: 1 hour 45 minutes

Paper Reference
1MA0/1F

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. 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 must not be used.**

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 ▶

P43382A

4/4/5/5/5/3/

P 4 3 3 8 2 A 0 1 2 8

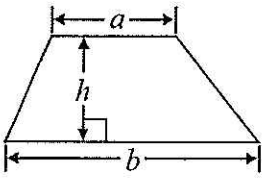
PEARSON

GCSE Mathematics 1MA0

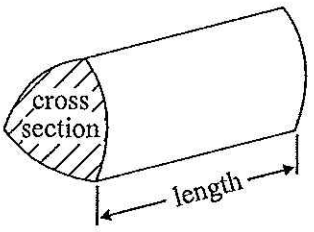
Formulae: Foundation Tier

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 × length



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1 Mary buys three tickets for a theatre show.
Each ticket costs £50

Mary also has to pay a booking fee.
The booking fee is £2.50 per ticket.

Work out the total amount Mary has to pay.

$3 \times £50 = £150$

$3 \times £2.50 = £7.50$

$$\begin{array}{r} 150 \\ +\ 7.50 \\ \hline 157.50 \end{array}$$

£ 157.50

(Total for Question 1 is 3 marks)

2 A car hire company wants to know if people are happy with their hire cars.
The company asks different people if they are happy with their hire cars.

The results for Monday, Tuesday, Wednesday and Thursday are shown in the pictogram.

Monday	○
Tuesday	○ ○
Wednesday	○ ○ ◗
Thursday	○ ○ ○
Friday	○ ◗

Key: ○ 4 happy people

(a) How many people were happy with their hire cars on Tuesday?

8

(1)

(b) How many people were happy with their hire cars on Wednesday?

10

(1)

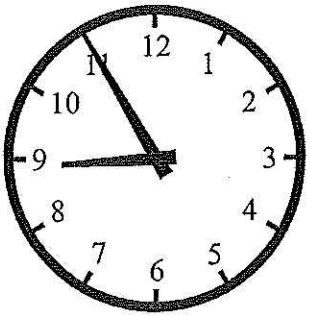
On Friday 7 people are happy with their hire cars.

(c) Complete the pictogram for Friday.

(1)

(Total for Question 2 is 3 marks)

3 Here is a clock in a school.



(a) (i) School starts 15 minutes earlier than the time shown on the clock.

What time does school start?

8.40

(ii) The first lesson ends 45 minutes after the time shown on the clock.

What time does the first lesson end?

9.40

(2)

(b) School finishes at 3.20 pm.

Write 3.20 pm using the 24-hour clock.

15.20

(1)

(Total for Question 3 is 3 marks)

4 $a = 5$
$b = 3$

Work out the value of $4a + 2b$

$(4 \times 5) + (2 \times 3)$

$20 + 6 = 26$

26

(Total for Question 4 is 2 marks)

5 Here are four digits.

8 2 4 3

(a) (i) Use two of these digits to make the smallest possible two-digit number.

23

(ii) Use three of these digits to make the three-digit number closest to 300

284

(2)

Here are four different digits.

5 1 7 9

(b) (i) Put one digit in each box to make the largest total.
You may only use each digit once.

7	1	+	9	5

(ii) Write down the total.

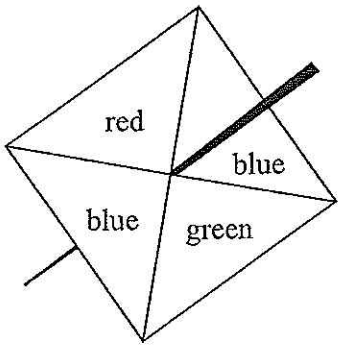
71
95
166

166

(2)

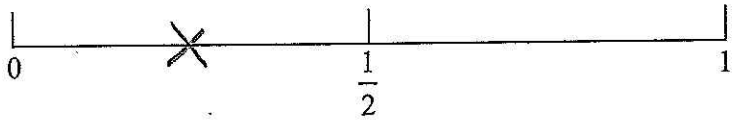
(Total for Question 5 is 4 marks)

6 Here is a fair 4-sided spinner.



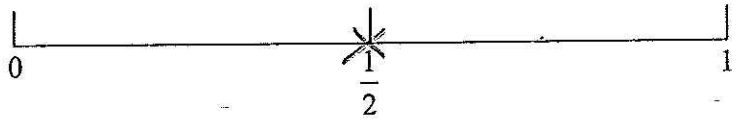
Lily will spin the spinner once.
The spinner will land on one of the colours.

(a) On the probability scale, mark with a cross (×) the probability that the spinner will land on green.



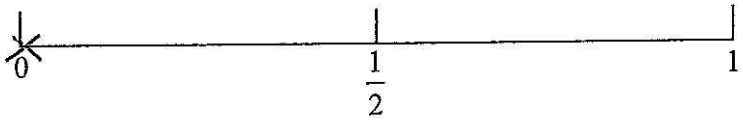
(1)

(b) On the probability scale, mark with a cross (×) the probability that the spinner will land on blue.



(1)

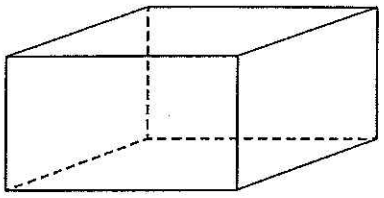
(c) On the probability scale, mark with a cross (×) the probability that the spinner will land on yellow.



(1)

(Total for Question 6 is 3 marks)

7 Here is a cuboid.



The following sentences are about cuboids.

Complete each sentence by writing the correct number in the gap.

(a) (i) A cuboid has ..6.. faces.

(ii) A cuboid has ..12.. edges.

(iii) A cuboid has ..8.. vertices.

(3)

Here is a different cuboid.

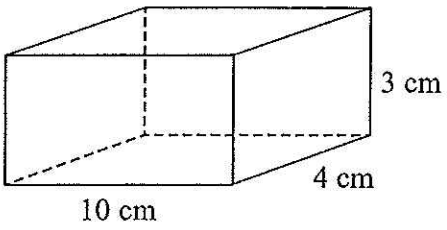


Diagram **NOT** accurately drawn

(b) Work out the volume of the cuboid.

$10 \times 4 \times 3 = 120$

$10 \times 4 = 40$

$40 \times 3 = 120$

..120.. cm^3

(2)

(Total for Question 7 is 5 marks)

8 (a) Work out $15 \div 5 + 7$

$15 \div 5 = 3$

$3 + 7 = 10$

10

(1)

(b) Work out $2 + 7 \times 2$

$7 \times 2 = 14$

$14 + 2 = 16$

16

(1)

(c) Work out $-5 + -6$

-11

(1)

(d) Work out $14 - -3$

17

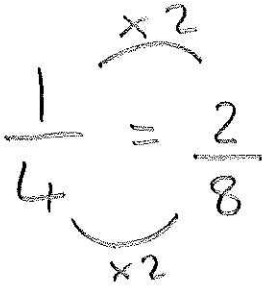
(1)

(e) Add brackets ( ) to make this statement correct.

$$12 - 2 \times (3 + 1) = 4$$

(1)

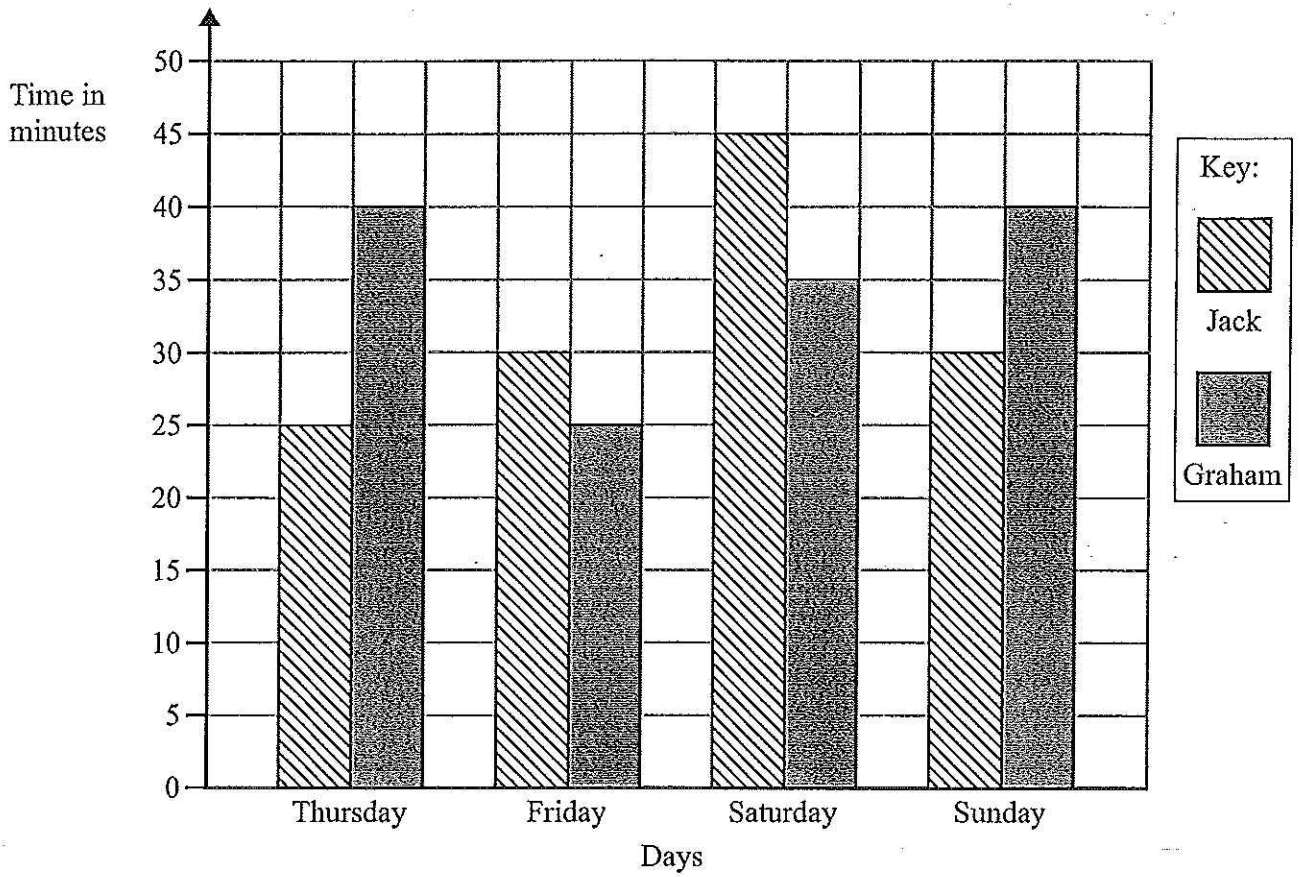
(f) Why does $\frac{1}{4} = \frac{2}{8}$?



(1)

(Total for Question 8 is 6 marks)

9 Jack and Graham each recorded the time, in minutes, they each spent sending messages on Thursday, on Friday, on Saturday and on Sunday last week.



(a) How many minutes did Graham spend sending messages on Saturday?

35 minutes

(1)

(b) On which day did Jack spend exactly 25 minutes sending messages?

Thursday

(1)

*(c) Who spent the greater total time sending messages?
You must show your working.

Jack	Graham
25	40
30	25
45	35
30	40
130	140

Graham sent 10 more messages in total

(3)

(Total for Question 9 is 5 marks)

10 Valentina is going to have a meal.
She can choose one starter and one main course from the menu.

Menu

Starter	Main course
Soup	Beef
Prawns	Tuna
Mushrooms	Vegetarian

Write down all the possible combinations Valentina can choose.

SB, ST, SV, PT, PB, PV, MB, MT, MV

(Total for Question 10 is 2 marks)

11 (a) Simplify $b + b + b + b$

4b

(1)

(b) Simplify $8n - 3n$

5n

(1)

(c) Simplify $3 \times c \times d$

3cd

(1)

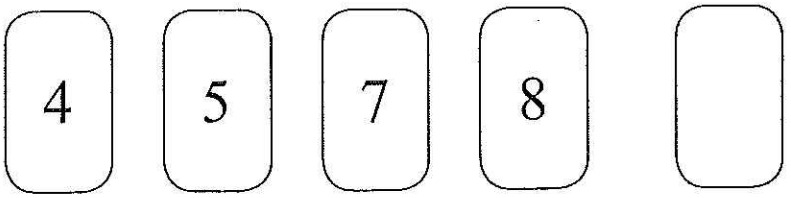
(d) Simplify $3x + 7y + 2x - y$

5x + 6y

(2)

(Total for Question 11 is 5 marks)

12 Here are five cards.



There is a whole number from 0 to 9 on each card.
The number on the last card is hidden.

The range of the five numbers is 6

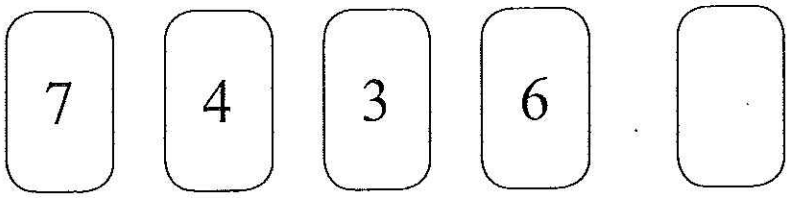
(a) Write down the whole number on the last card.

8 - 6 = 2

2

(1)

Here is a different set of five cards.



There is a different whole number from 0 to 9 on each card.
The number on the last card is hidden.

The median of the numbers on the five cards is 4

(b) Which whole numbers could be on the last card?

3 4 6 7

0, 1, 2

(2)

(Total for Question 12 is 3 marks)

13 Jessica thinks of a number.

She multiplies the number by 3
She then subtracts 7
Her answer is 5

What number did Jessica think of?

$x \times 3 = 3x$

$3x - 7 = 5$

$+7 \quad +7$

$3x = 12$

$\div 3 \quad \div 3$

$x = 4$

4

(Total for Question 13 is 2 marks)

14 (a) Measure the length of the line PQ.

Give your answer in centimetres.

7 cm

(1)

(b)

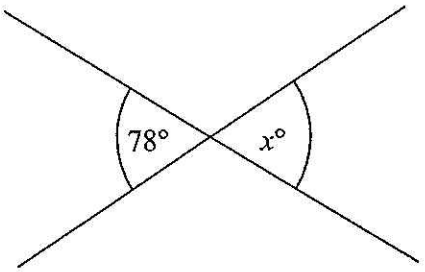


Diagram **NOT** accurately drawn

(i) Write down the value of x.

$x =$ 78°

(ii) Give a reason for your answer.

Vertically opposite angles are equal

(2)

(Total for Question 14 is 3 marks)

*15 Aleena is planning a trip for people at her Youth Club.

Here are the costs for the trip.

Transport	£230
Insurance	£50
Other costs	£30
Entry fee	£14 per person

Aleena charges £18 per ticket for the trip.
She sells 100 tickets.

Is there enough money from the ticket sales for Aleena to pay all the costs for the trip?
You must show your working.

$18 \times 100 = 1800$

$14 \times 100 = 1400$

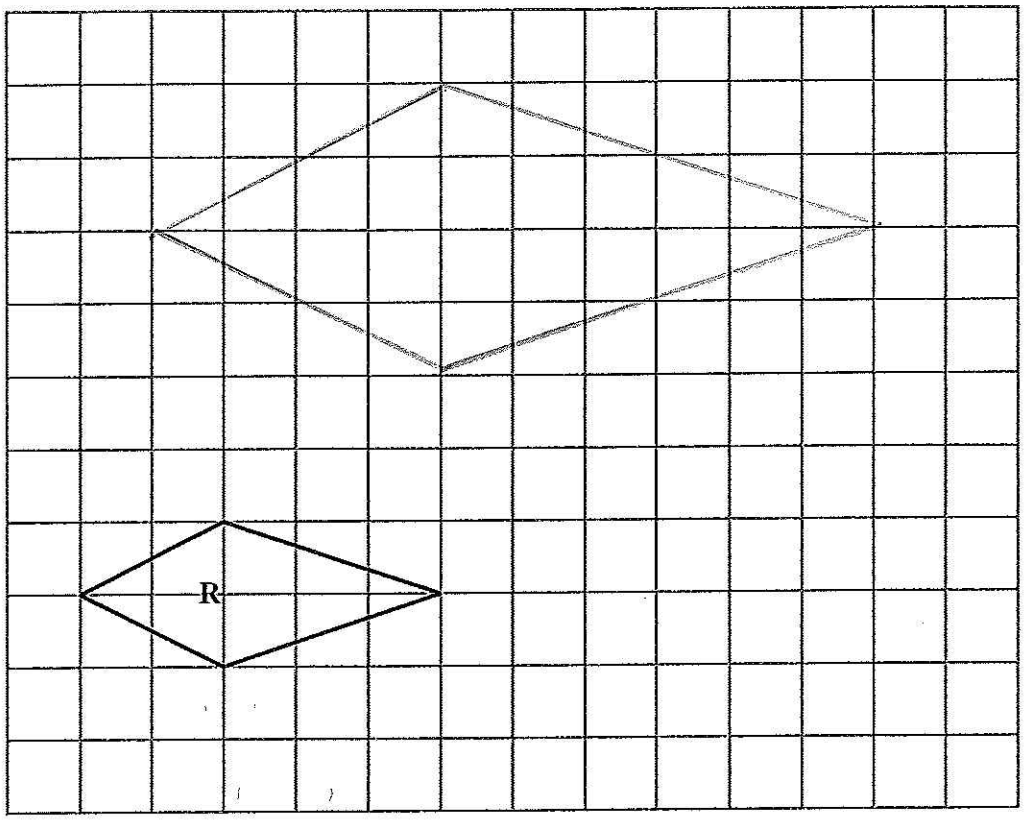
$$\begin{array}{r} 1400 \\ 230 \\ 50 \\ +\ 30 \\ \hline 1710 \end{array}$$

$$\begin{array}{r} {}^{7}\cancel{1}{}^{1}\cancel{8}00 \\ -\ 1710 \\ \hline 0090 \end{array}$$

Yes because she would have £90 extra.

(Total for Question 15 is 4 marks)

16



On the grid, draw an enlargement of shape **R** with a scale factor of 2

(Total for Question 16 is 2 marks)

17 Write these numbers in order of size.
Start with the smallest number.

0.6 $\frac{2}{3}$ 65% 0.606

0.66 0.65

0.6, 0.606, 0.65, 0.66

(Total for Question 17 is 2 marks)

18 On Monday Ravi drives for 4 hours.
His average speed is 30 mph.

(a) How far does Ravi drive on Monday?

$30 \times 4 = 120$

120 miles

(2)

On Tuesday Ravi drives 200 km.

5 miles = 8 kilometres.

*(b) On which day did Ravi drive further?

$8\overline{)200}$ = 25

$25 \times 5 = 125$

Ravi travelled Futher on the tuesday

(3)

(Total for Question 18 is 5 marks)

---

19 (a) Solve $\frac{n}{7} = 2$

$\frac{n}{7} = 2$

$\times 7 \left(\quad \right) \times 7$

$n = 14$

14

(1)

(b) Solve $3g + 4 = 19$

$3g + 4 = 19$

$-4 \left(\quad \right) - 4$

$3g = 15$

$\div 3 \left(\quad \right) \div 3$

$g = 5$

(2)

(Total for Question 19 is 3 marks)

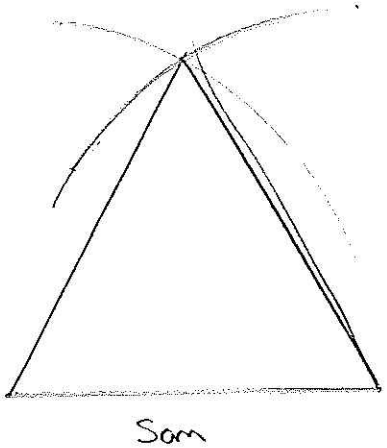
20 Omar is carrying out a survey of the students in his maths group.
He wants to find out the month of each student's birthday.

Design a suitable table for a data collection sheet he could use to collect this information.

Month	Tally	Total
January		
Febuary		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

(Total for Question 20 is 3 marks)

21 Make an accurate drawing of an equilateral triangle of side length 5 cm.



(Total for Question 21 is 2 marks)

22 Here is a rule for working out the area of a triangle.

> Multiply the base by the height.
>
> Then divide by 2

A triangle has a base of 12 cm and a height of 6 cm.

(a) Use the rule to work out the area of the triangle.

$12 \times 6 = 72$

$72 \div 2 = 36$

36 ..... cm^2

(2)

A different triangle has an area of 55 cm^2.
It has a height of 11 cm.

(b) Work out the base of this triangle.

$55 \times 2 = 110$

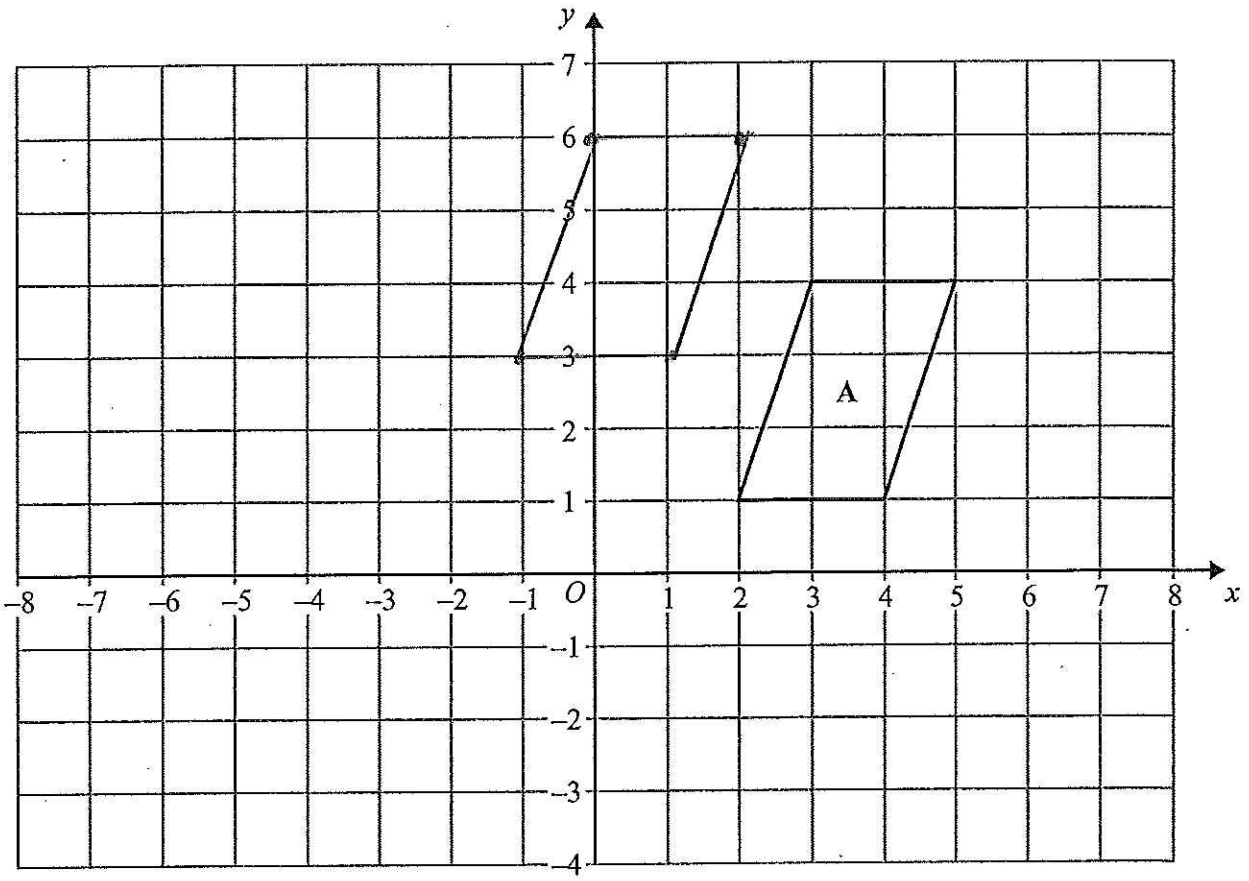
$110 \div 11 = 10$

10 ..... cm

(2)

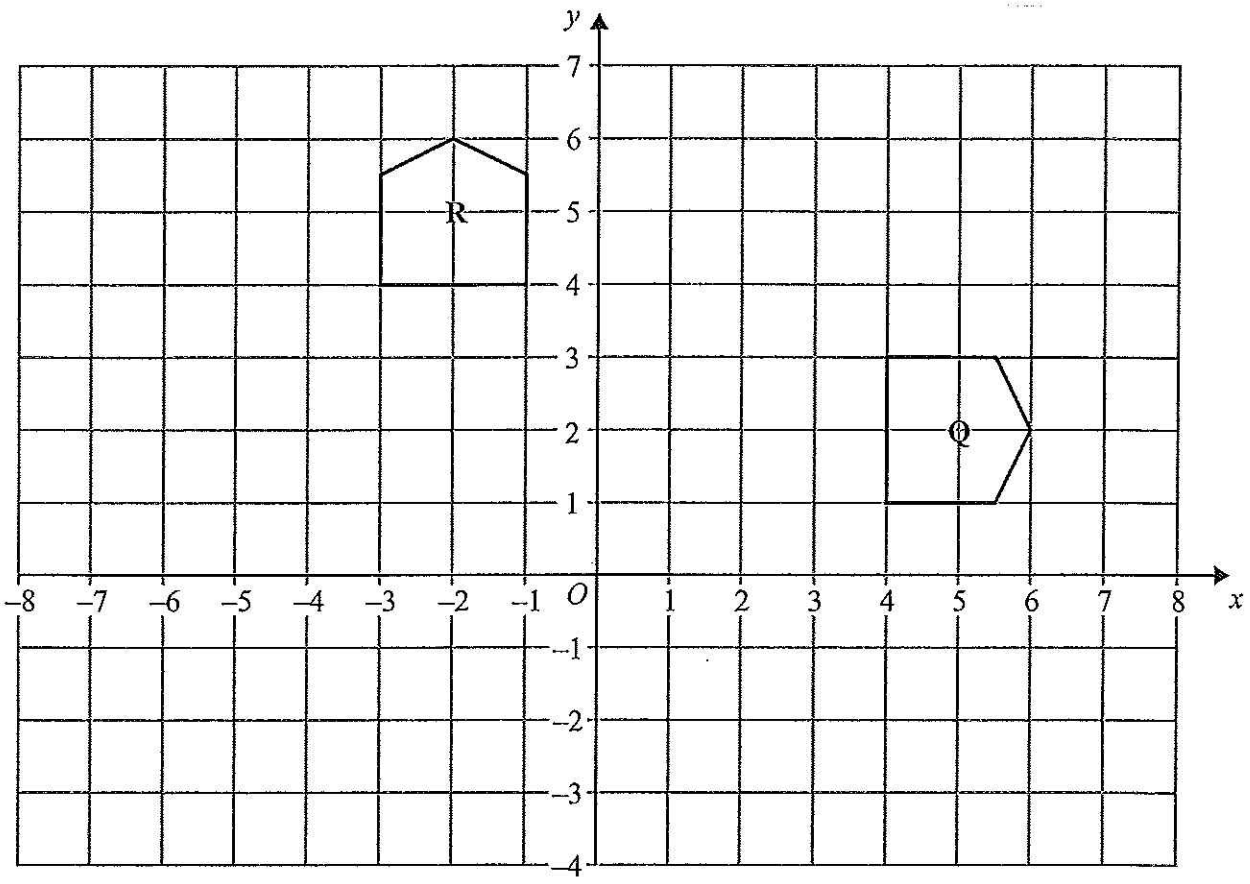
(Total for Question 22 is 4 marks)

23



(a) Translate shape **A** by the vector $\begin{pmatrix} -3 \\ 2 \end{pmatrix}$.

(1)



(b) Describe fully the single transformation that maps shape **Q** onto shape **R**.

Rotation of 90° anti clockwise around point (0,0)

(3)

(Total for Question 23 is 4 marks)

*24 The diagram shows the floor of a village hall.

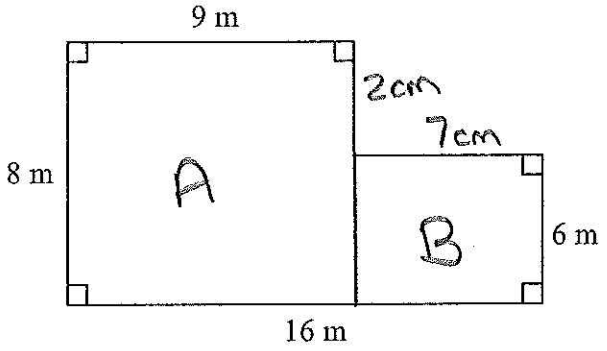


Diagram **NOT** accurately drawn

The caretaker needs to polish the floor.

One tin of polish normally costs £19
One tin of polish covers 12 m² of floor.

There is a discount of 30% off the cost of the polish.

The caretaker has £130

Has the caretaker got enough money to buy the polish for the floor?
You must show all your working.

Area of A = 9 × 8 = 72 m²

Area of B = 7 × 6 = 42 m²

72
+42
114 m²

114 ÷ 12 = 9.5

So I need 10 tins of polish

10 × 19 = 190

10% of 190 = 19

19
19
+19
57
2

8
190
- 57
133

No he does not have enough
He needs £133

(Total for Question 24 is 5 marks)

25 Julia is investigating how much exercise people do in a week.

She uses these two questions in a questionnaire.

Question 1 What is your age?

☐ Under 15 ☐ 15 to 25 ☐ 25 to 40 ☐ over 40

Question 2 How much exercise do you do?

☐ A bit ☐ Some ☐ A lot

(a) Write down **one** thing wrong with each of these questions.

Question 1

Overlapping Boxes

Question 2

Does not say a time frame eg Month

(2)

Julia wants to know how much time people spend exercising.

(b) Design a question Julia could use in her questionnaire.

How much time do you spend excersing in a week?

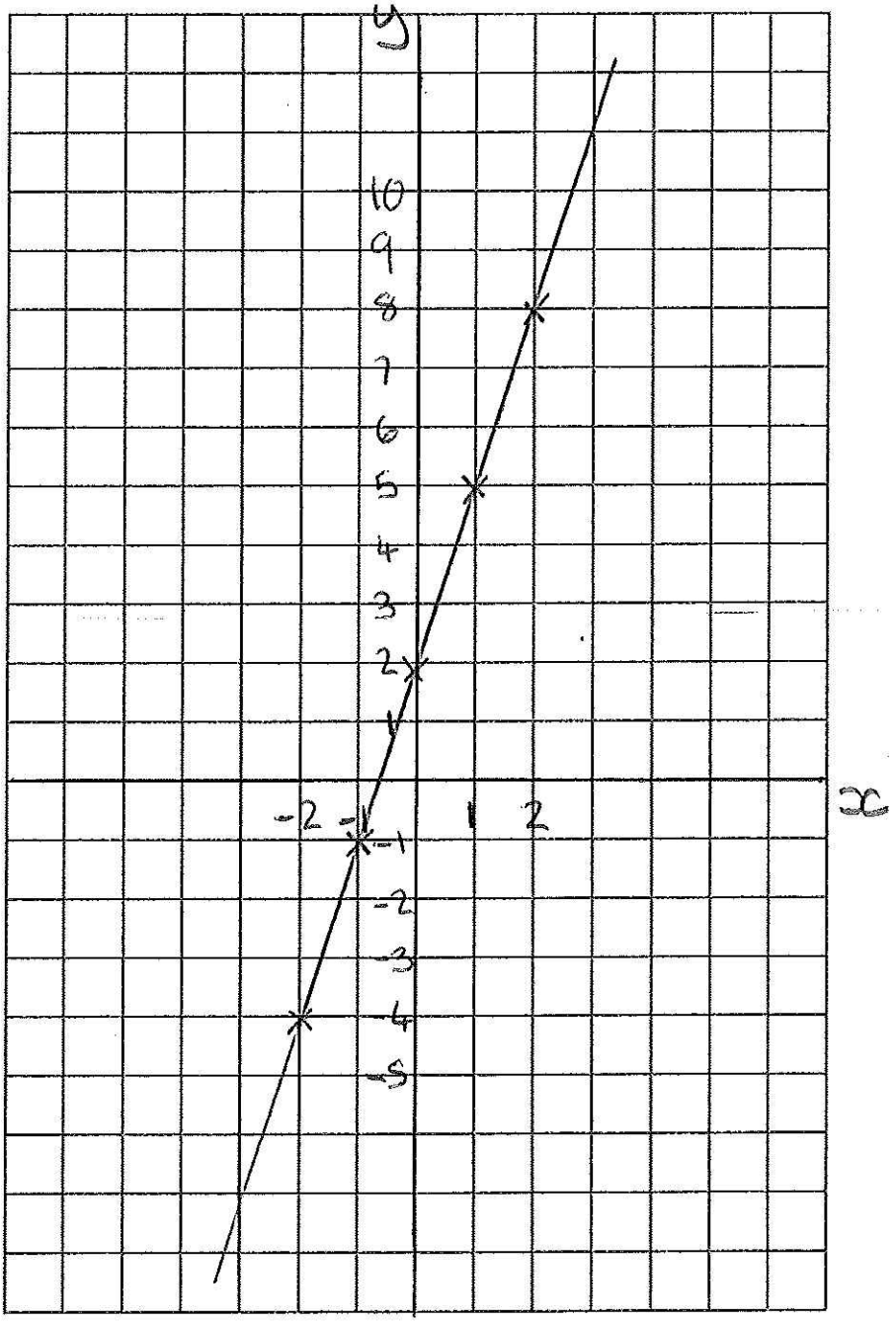
☐ 0 - 2 hours ☐ 3 - 5 hours ☐ 6 - 8 hours ☐ 9+ hours

(2)

(Total for Question 25 is 4 marks)

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

x	-2	-1	0	1	2
y	-4	-1	2	5	8



(Total for Question 26 is 4 marks)

27 Rita is going to make some cheeseburgers for a party.
She buys some packets of cheese slices and some boxes of burgers.

There are 20 cheese slices in each packet.
There are 12 burgers in each box.

Rita buys exactly the same number of cheese slices and burgers.

(i) How many packets of cheese slices and how many boxes of burgers does she buy?

20 12
40 24
60 36
80 48
60

3 ..... packets of cheese slices

5 ..... boxes of burgers

Rita wants to put one cheese slice and one burger into each bread roll.
She wants to use all the cheese slices and all the burgers.

(ii) How many bread rolls does Rita need?

60 ..... bread rolls

(Total for Question 27 is 4 marks)

28 ABC is a triangle.

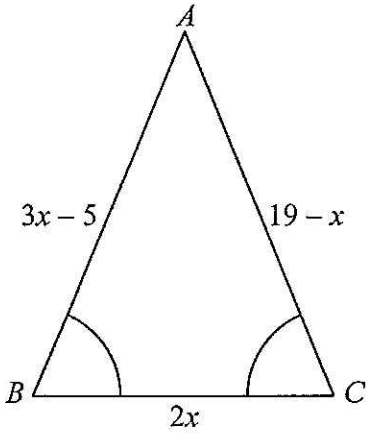


Diagram **NOT** accurately drawn

Angle ABC = angle BCA.

The length of side AB is $(3x - 5)$ cm.
The length of side AC is $(19 - x)$ cm.
The length of side BC is $2x$ cm.

Work out the perimeter of the triangle.
Give your answer as a number of centimetres.

$3x - 5 = 19 - x$ (+5)

$3x = 24 - x$ (+x)

$4x = 24$ (÷4)

$x = 6$

$3x - 5 + 19 - x + 2x$

$4x + 14$

$(4 \times 6) + 14 = 38$

38 cm

(Total for Question 28 is 5 marks)

TOTAL FOR PAPER IS 100 MARKS

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