Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson Edexcel International GCSE

Centre Number | | | | | |

Candidate Number | | | | |

Tuesday 21 May 2019

Morning (Time: 2 hours) | Paper Reference **4MA1/1F**

Mathematics A

Level 1/2

Paper 1F

Foundation Tier



You must have:
Ruler graduated in centimetres and millimetres, protractor, 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.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page.
  Anything you write on the formulae page will gain NO credit.

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.*

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

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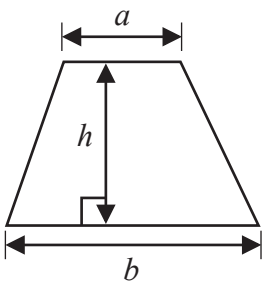
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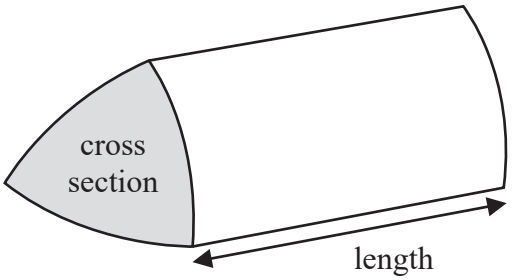
International GCSE Mathematics

Formulae sheet – Foundation Tier

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

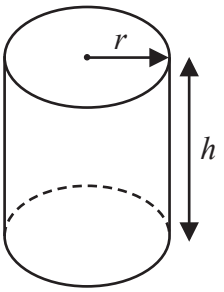


Volume of prism = area of cross section × length



Volume of cylinder = $\pi r^2 h$

Curved surface area of cylinder = $2\pi rh$



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Answer ALL TWENTY THREE questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1

3	8	16	19	24	51	60	81

From the numbers in the box, write down

(a) an odd number

.....

(1)

(b) a multiple of 12

.....

(1)

(c) a square number

.....

(1)

(d) a prime number

.....

(1)

(Total for Question 1 is 4 marks)

2 Complete the following statements by writing a number on each dotted line.

(a) A pentagon has ..... sides.

(1)

(b) The size of each angle in an equilateral triangle is ..... °

(1)

(c) 1 kilometre = ... metres.

(1)

(Total for Question 2 is 3 marks)

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3 The table gives the surface areas, in square kilometres, of six lakes in Africa.

Lake	Surface area (square kilometres)
Albert	5299
Malawi	29 500
Mweru	5120
Tanganyika	32 600
Turkana	6405
Victoria	68 879

(a) Which of these lakes has the least surface area?

.....

(1)

(b) Write the number 6405 in words.

.....

(1)

(c) Write the number 68 879 correct to the nearest thousand.

.....

(1)

Sammy says that the surface area of Lake Malawi is about $5\frac{1}{2}$ times the surface area of Lake Albert.

(d) Is Sammy correct?
Give a reason for your answer.

.....

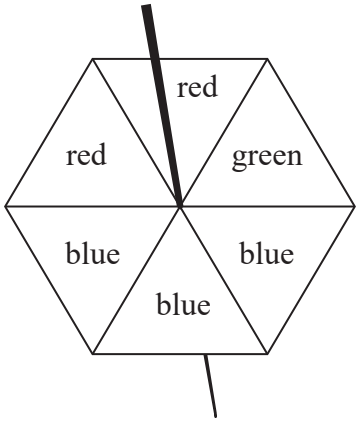
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(2)

(Total for Question 3 is 5 marks)

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4 The diagram shows a fair 6-sided spinner.



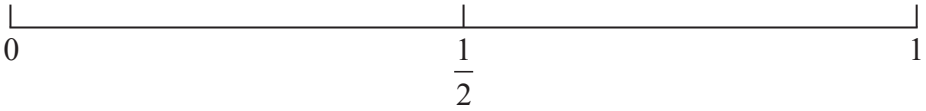
Rami is going to spin the spinner once.

(a) Circle the word in the box below that best describes the likelihood that the spinner will land on green.

impossible	unlikely	evens	likely	certain

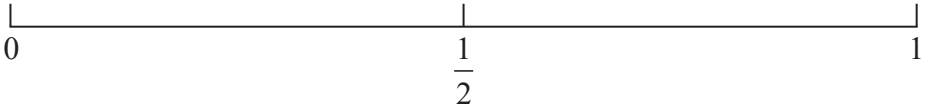
(1)

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



(1)

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



(1)

(Total for Question 4 is 3 marks)

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5 There are 12 481 people at a concert.
8906 of these people are adults.
The rest of the people are children.

$\frac{3}{5}$ of the children are boys.

Work out the number of girls at the concert.

.....

(Total for Question 5 is 4 marks)

6 (a) Simplify $6e \times 2f$

.....

(1)

(b) Simplify $5m + 7k - 2m + k$

.....

(2)

(c) Solve $5y + 3 = 14$

$y =$ .....

(2)

(Total for Question 6 is 5 marks)

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7 Here are the shoe sizes of 11 people.

7 8 4 4 4 10 5 7 7 4 4

(a) Write down the mode.

.....

(1)

(b) Work out the range.

.....

(2)

(c) Find the median.

.....

(2)

Clark works in a shoe shop.

On Tuesday morning he sold some pairs of shoes.
The mean price of the pairs of shoes was £34

On Tuesday afternoon he sold only two pairs of shoes.
The prices of these pairs of shoes were £31 and £49

(d) Is the mean price of all the pairs of shoes Clark sold on Tuesday more or less than £34?
You must give a reason for your answer.

.....

.....

.....

(1)

(Total for Question 7 is 6 marks)

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8 The diagram shows two triangles, *CDB* and *BDA*.

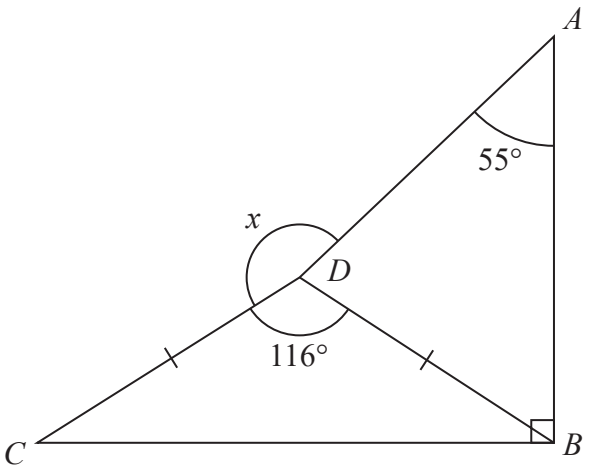


Diagram **NOT** accurately drawn

DC = *DB*
Angle *ABC* = 90°
Angle *CDB* = 116°
Angle *DAB* = 55°

Work out the size of the angle marked *x*.
Give a reason for each stage of your working.

.....°

(Total for Question 8 is 5 marks)

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9 (a) Write these fractions in order of size.
Start with the smallest fraction.

$$\frac{7}{10} \quad \frac{4}{5} \quad \frac{1}{2} \quad \frac{29}{40}$$

.....

(2)

(b) Show that $\frac{8}{15} + \frac{3}{10} = \frac{5}{6}$

(2)

(c) Show that $4\frac{2}{3} \div 1\frac{1}{9} = 4\frac{1}{5}$

(3)

(Total for Question 9 is 7 marks)

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10 The pictogram gives information about the number of emails Sami sent on each of five days last week.

Monday	▭ ▭ ▭ ▯
Tuesday	▭ ▭ ▭ ▭ ▭ ▭
Wednesday	▭ ▭ ▭ ▭ ▭ ▭ ▯
Thursday	▭ ▭ ▭ ▭ ▭ ▭ ▬
Friday	▭ ▭ ▭ ▭ ▭ ▭ ▭ ▭

▭ represents 8 emails

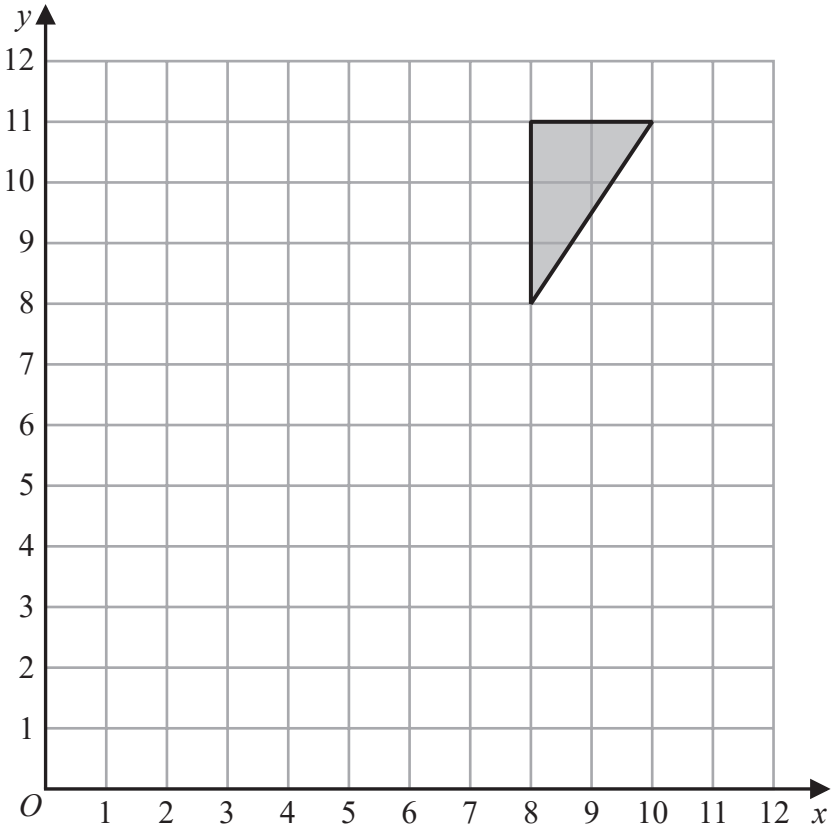
Work out the mean number of emails Sami sent on these 5 days.

.....

(Total for Question 10 is 4 marks)

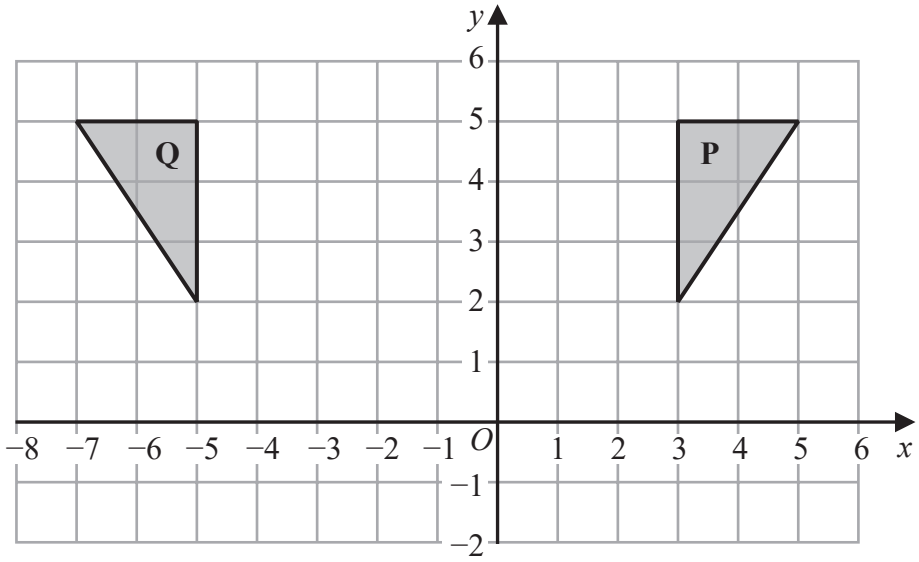
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11



(a) On the grid above, rotate the triangle 180° about (7, 6)

(2)



(b) Describe fully the single transformation that maps triangle **P** onto triangle **Q**.

.....

.....

(2)

(Total for Question 11 is 4 marks)

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12 (a) Use your calculator to work out the value of

$$\frac{24.3 - 16.8}{0.18} + \sqrt{67.4}$$

Write down all the figures on your calculator display.

.....

(2)

(b) Write your answer to part (a) correct to 1 significant figure.

.....

(1)

(Total for Question 12 is 3 marks)

13 Each exterior angle of a regular polygon is 24°

Work out the number of sides of the polygon.

.....

(Total for Question 13 is 2 marks)

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14 (a) Find the highest common factor (HCF) of 40 and 64

.....

(2)

$A = 2^n \times 3 \times 5^m$

(b) Write $8A$ as a product of powers of its prime factors.

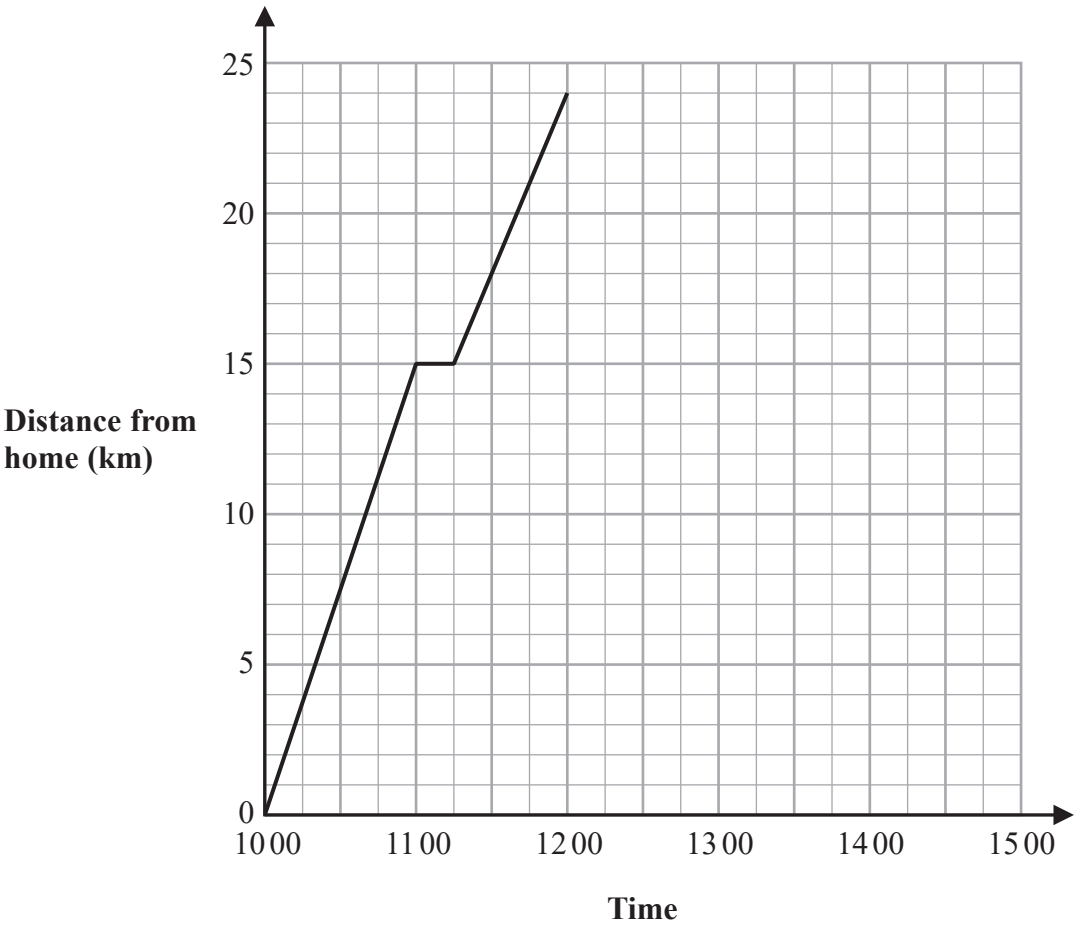
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(2)

(Total for Question 14 is 4 marks)

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15 Jalina left her home at 10 00 to cycle to a park.
On her way to the park, she stopped at a friend's house and then continued her journey to the park.
Here is the distance-time graph for her journey to the park.



(a) On her journey to the park, did Jalina cycle at a faster speed before or after she stopped at her friend's house?
Give a reason for your answer.

.....

.....

.....

(1)

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Jalina stayed at the park for 45 minutes.
She then cycled, without stopping, at a constant speed of 16 km/h from the park back to her home.

(b) Show all this information on the distance-time graph.

(2)

(c) Work out Jalina's average cycling speed, in kilometres per hour, for the complete journey to the park and back.
Do **not** include the times when she was not cycling in your calculation.
Give your answer correct to 1 decimal place.

..... km/h

(3)

(Total for Question 15 is 6 marks)

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16 $P = 2g + 3h$

(a) Work out the value of P when $g = 7$ and $h = -4$

.....

(2)

(b) Simplify $e^9 \div e^5$

.....

(1)

(c) Simplify $(y^2)^8$

.....

(1)

(d) Expand and simplify $(x + 9)(x - 2)$

.....

(2)

(e) Factorise fully $16c^4p^2 + 20cp^3$

.....

(2)

(Total for Question 16 is 8 marks)

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17 In a box,

number of red buttons : number of blue buttons = 5 : 3

number of blue buttons : number of green buttons = 1 : 2

There are 48 green buttons in the box.

Work out the number of red buttons in the box.

.....

(Total for Question 17 is 4 marks)

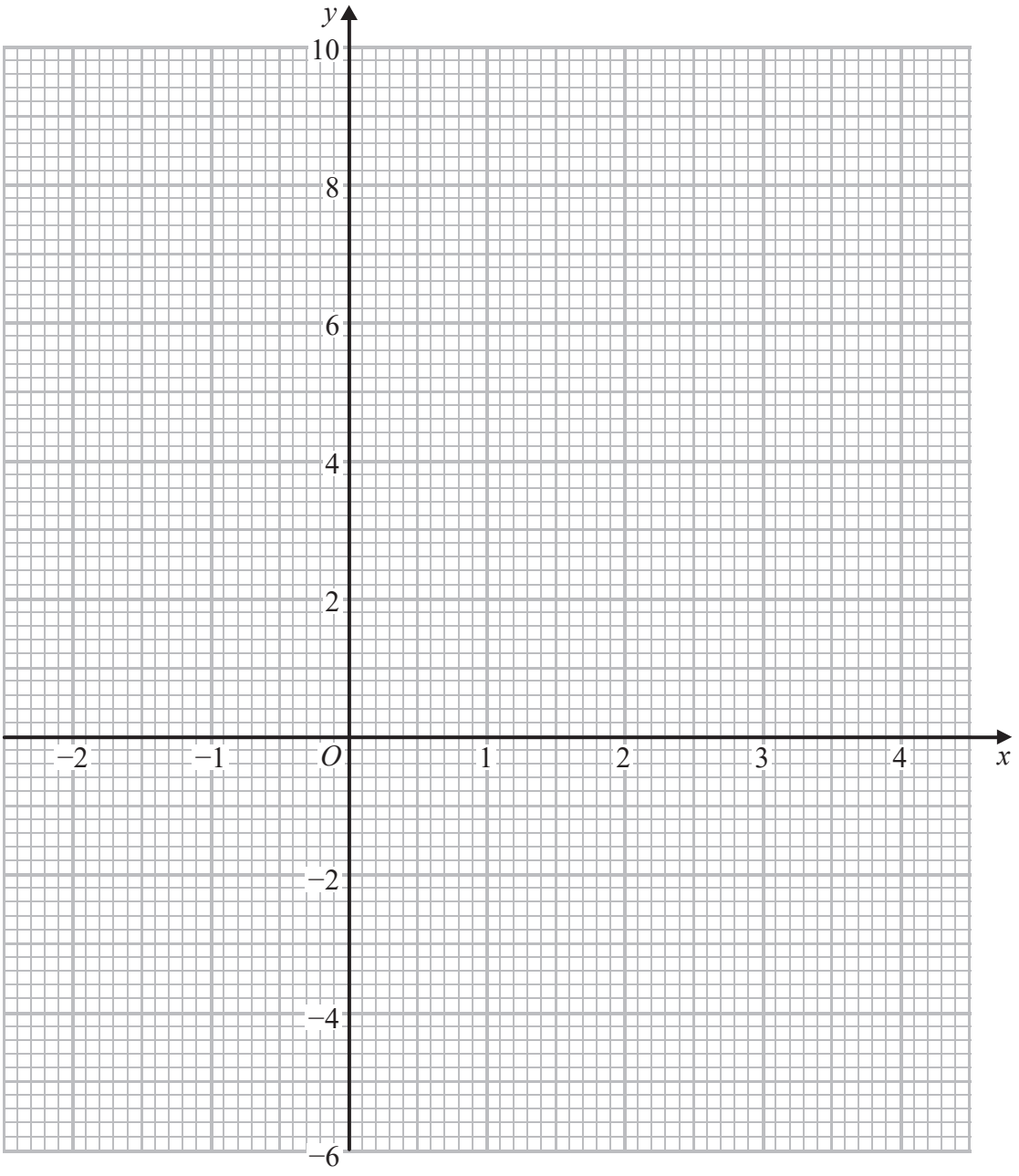
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18 (a) Complete the table of values for $y = x^2 - 3x - 1$

x	−2	−1	0	1	2	3	4
y			−1		−3		3

(2)

(b) On the grid, draw the graph of $y = x^2 - 3x - 1$ for all values of x from −2 to 4



(2)

(Total for Question 18 is 4 marks)

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19 Becky has a biased 6-sided dice.

The table gives information about the probability that, when the dice is thrown, it will land on each number.

Number	1	2	3	4	5	6
Probability	$2x$	0.18	$2x$	$3x$	0.26	x

Becky is going to throw the dice 200 times.

Work out an estimate for the number of times that the dice will land on an even number.

.....

(Total for Question 19 is 4 marks)

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20 The diagram shows a solid cuboid made from wood.

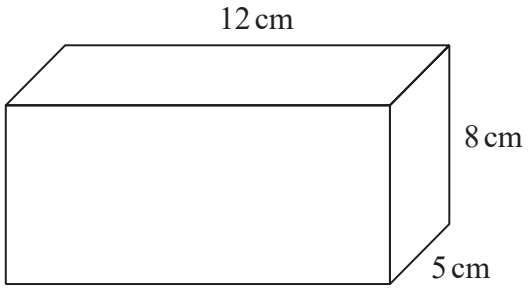


Diagram **NOT** accurately drawn

The wood has density 0.7 g/cm^3

Work out the mass of the cuboid.

..... grams

(Total for Question 20 is 3 marks)

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21 (a) Write 5.7×10^6 as an ordinary number.

.....

(1)

(b) Write 0.004 in standard form.

.....

(1)

(c) Work out $\dfrac{2 \times 10^4 + 3 \times 10^5}{6.4 \times 10^{-2}}$

.....

(2)

(Total for Question 21 is 4 marks)

22 On 1st January 2016 Li bought a boat for \$170 000
The value of the boat depreciates by 8% per year.

Work out the value of the boat on 1st January 2019
Give your answer correct to the nearest dollar.

\$ .....

(Total for Question 22 is 3 marks)

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23 The diagram shows a shape made from a right-angled triangle and a semicircle.

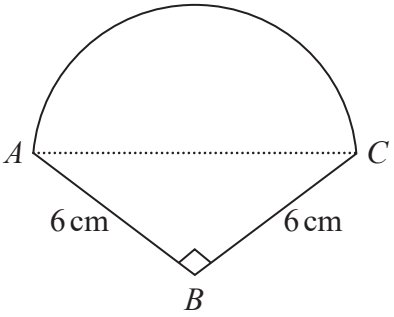


Diagram **NOT** accurately drawn

AC is the diameter of the semicircle.
BA = *BC* = 6 cm
Angle *ABC* = 90°

Work out the area of the shape.
Give your answer correct to 1 decimal place.

..... cm^2

(Total for Question 23 is 5 marks)

TOTAL FOR PAPER IS 100 MARKS

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