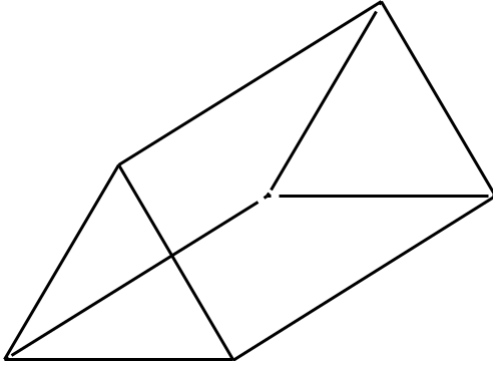


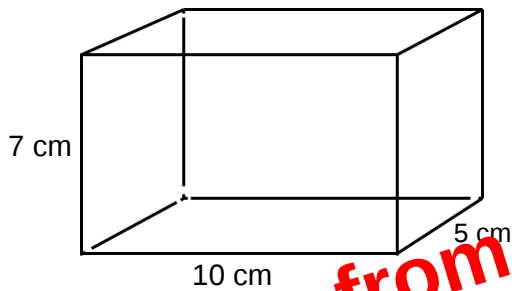
- 1 (a) Write down the mathematical name of this solid.
Choose from the list in the box.

cone cube cylinder prism sphere



(a) [1]

- (b) The diagram shows a cuboid.



- (i) How many edges does the cuboid have?

(b)(i) [1]

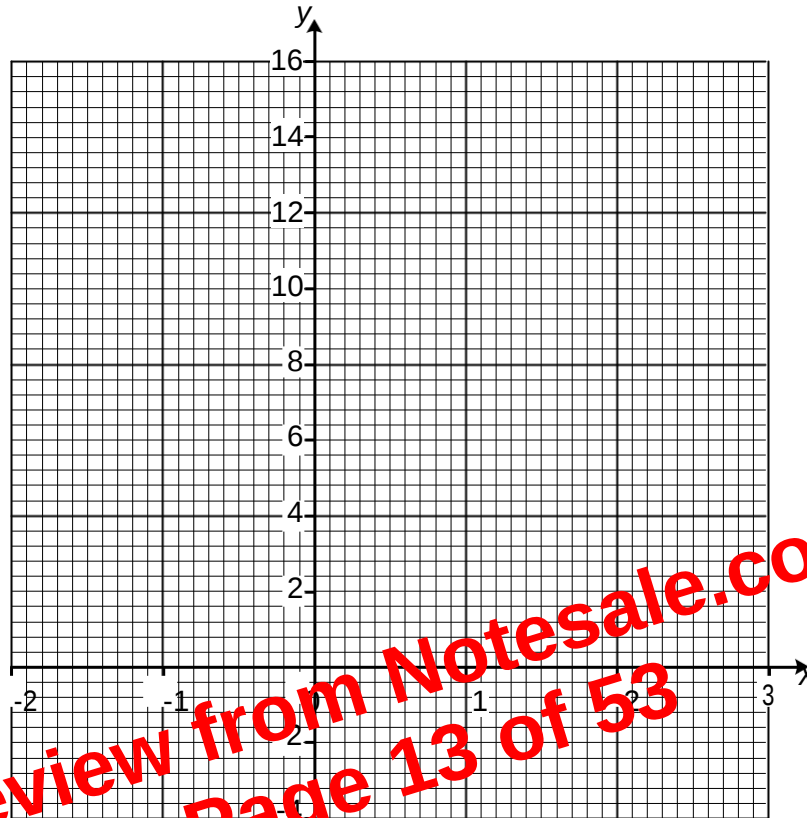
- (ii) The cuboid has dimensions 10 cm, 7 cm and 5 cm. Work out the volume of the cuboid.

(ii) cm^3 [2]

16 Here is a table of values for $y = 2x^2 - 3x$.

x	-2	-1	0	1	2	3
y	14	5	0	-1	2	9

(a) Draw the graph of $y = 2x^2 - 3x$ for values of x from -2 to 3.



[3]

(b) Use your graph to find the x -coordinates of the points where the graph of $y = 2x^2 - 3x$ crosses the line $y = 6$.

(b) $x = \dots\dots\dots$ and $x = \dots\dots\dots$ **[2]**

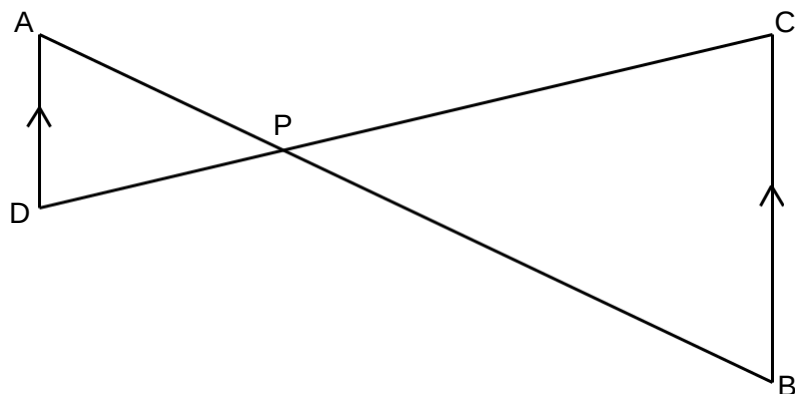
- 17 Riley invests some money in a savings account that pays 4% simple interest per year. After 5 years the total interest that Riley's investment has earned is £360.

Find the total value of Riley's investment after 5 years. You must show your working.

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£ [5]

- 18 The diagram shows two straight lines AB and DC that intersect at P. DA is parallel to BC.



Complete these statements to show that triangle PAD is similar to triangle PBC.

Angle $\angle ADP$ = angle $\angle BCP$ because they are alternate angles

Angle $\angle APD$ = angle because they are angles

Angle = angle because they are angles

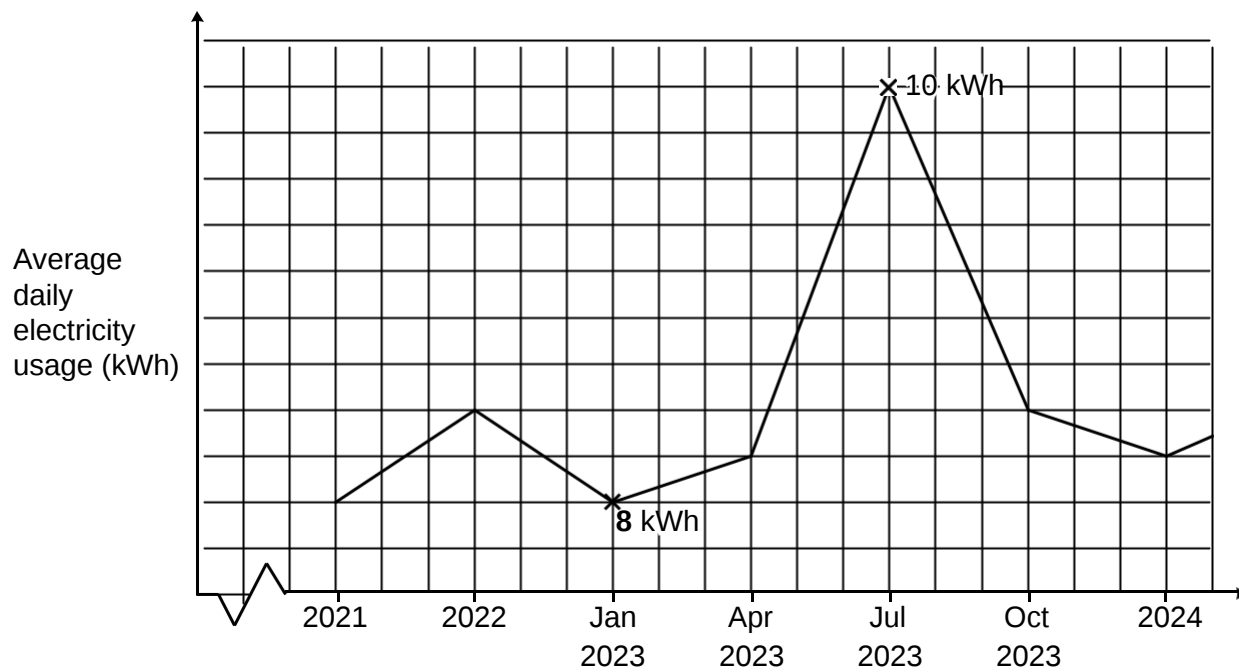
Triangle PAD is similar to triangle PBC because

.....

[4]

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- 19 The graph shows a household's average daily electricity usage, in kilowatt hours (kWh).



Give **two different** reasons why this graph is misleading.

Reason 1:

.....

Reason 2:

..... [2]

- 20 The word MATHEMATICS is spelt using tiles.



The tiles are put into an empty bag.

One at a time, 99 children each take a tile at random from the bag.
They record the letter and then put the tile back in the bag.

Work out how many times the letter M is expected to be taken from the bag.

..... [3]

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All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

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Question			Answer	Marks	Part marks and guidance	
20			18 nfww	3	B2 for answer 99 or M2 for $\frac{99}{11}$ or or B1 for — or M1 for $[k \times] —$ or M1 for $\frac{a}{b}$ 99 e.g. $\frac{99}{11} = 9$ and then 2×9 For B1 accept „0.181 to 0.182 or 18.1% to 18.2% Condone k as 0.5 or 1 or an integer $3 \leq k \leq 10$ Do not imply M1 from just 9 seen $0 < \frac{a}{b} < 1$ and either $a = 2$ or $b = 11$	

Question 19

Reason	Mark	Reason
It doesn't have months for each year. Only a few for 2023	1	
There are no numbers on the y axis	1	
As it doesn't have all the numbers going up the side of electricity	1	
The dates keep skipping from years to months and back again	1	
It has months instead of years for 2023	1	
Some years have months labelled	1	Implies others do not
The x axis dates are uneven distances apart	1	Condone x-axis
x-axis goes up by different amount	1	BOD recognising uneven scale
The y-axis doesn't have any data	1	BOD means not having any numbers
2023 has four sections but the other years only have one	1	Recognises inconsistent scale
The y axis doesn't start from 0	1	Condone reference to y axis
8 kWh is very far away from 10 kWh making it look like a big difference where in reality it isn't	1	BOD implies "because vertical scale does not start at 0"
The scale of kWh has a large space between 8 and 10	1	BOD implies "because vertical scale does not start at 0"
More results for 2023	1	Correct because it shows the monthly figures
It misses out a couple of months	0	Could be referring to [Jan] Feb, Mar, [April]
The graphs is in months	0	Wrong as the graph also has years. Statement doesn't recognise the uneven scale.
The axis doesn't start from 0	0	y axis not referenced
On the x axis, there's a fluctuation/jagged line on the line	0	
Doesn't show the numbers	0	Vertical axis not referenced
The y-axis isn't labelled	0	It is labelled but does not have a scale
The graph is on a small scale/ It's not drawn to scale	0	Do not accept reference to "drawn to scale"