Surname	Centre Number	Candidate Number
Other Names		0

GCSE

185/07

MATHEMATICS

FOUNDATION TIER

PAPER 1

P.M. MONDAY, 6 June 2011

2 hours

CALCULATORS ARE NOT TO BE USED FOR THIS PAPER

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use gel pen. Do not use correction fluid.

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.

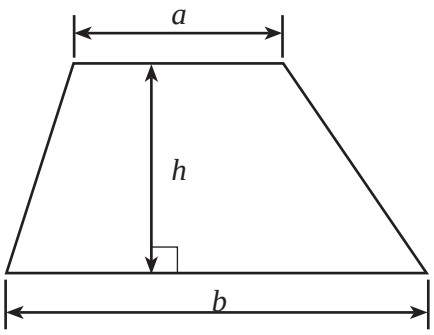
The number of marks is given in brackets at the end of each question or part-question.

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

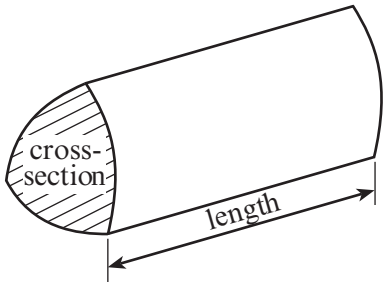
0185 070001

Formula List

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



Volume of prism = area of cross-section × length



Examiner only

1. *(a)* (i) Complete the following cheque by writing the amount in words on the lines provided.

Eagle Bank Date 3rd June 2011

Pay A Smith

£ 4056

Signed

(ii) Complete the following cheque by writing the amount in figures on the line provided.

Eagle Bank Date 3rd June 2011

Pay A Smith

Fifteen thousand four hundred and seven

pounds only

£

Signed

[2]

(b) Using only numbers between 20 and 30, write down

(i) a multiple of 8,

.....

(ii) a square number.

.....

[2]

(c) Write 9374

(i) correct to the nearest 10,

.....

(ii) correct to the nearest 100.

.....

[2]

Examiner only

2. *(a)* Write down the value of the 4 in the number 74152.

.....

[1]

(b) Find the sum of the numbers 429 and 336.

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[1]

(c) Find the difference between the numbers 579 and 267.

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[1]

(d) Write down all the factors of 18.

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[2]

(e) John has a £10 note.
Loaves of bread cost £1.50 each.
He buys as many loaves of bread as he can.
How much money will he have left over?

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[3]

(f) **Showing all your working**, find an **estimate** for the value of $49{\cdot}8 \times 9$.

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[2]

Examiner only

3.

The formula for the cost of buying a computer on credit is

cost = monthly payment x 20 + deposit

(a) Find the **cost** of a computer, when the **monthly payment** is £18 and the **deposit** is £50.

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[2]

(b) The **cost** of another computer is £520.
Find the **monthly payment** when the **deposit** is £60.

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[2]

Examiner only

4. The number of pupils in Year 11 in each of four different schools is shown in the following table:

School	A	B	C	D
Number of pupils in Year 11	80	140	110	130

(a) Draw a pictogram to represent the above information, using ⊕ to represent 40 pupils.

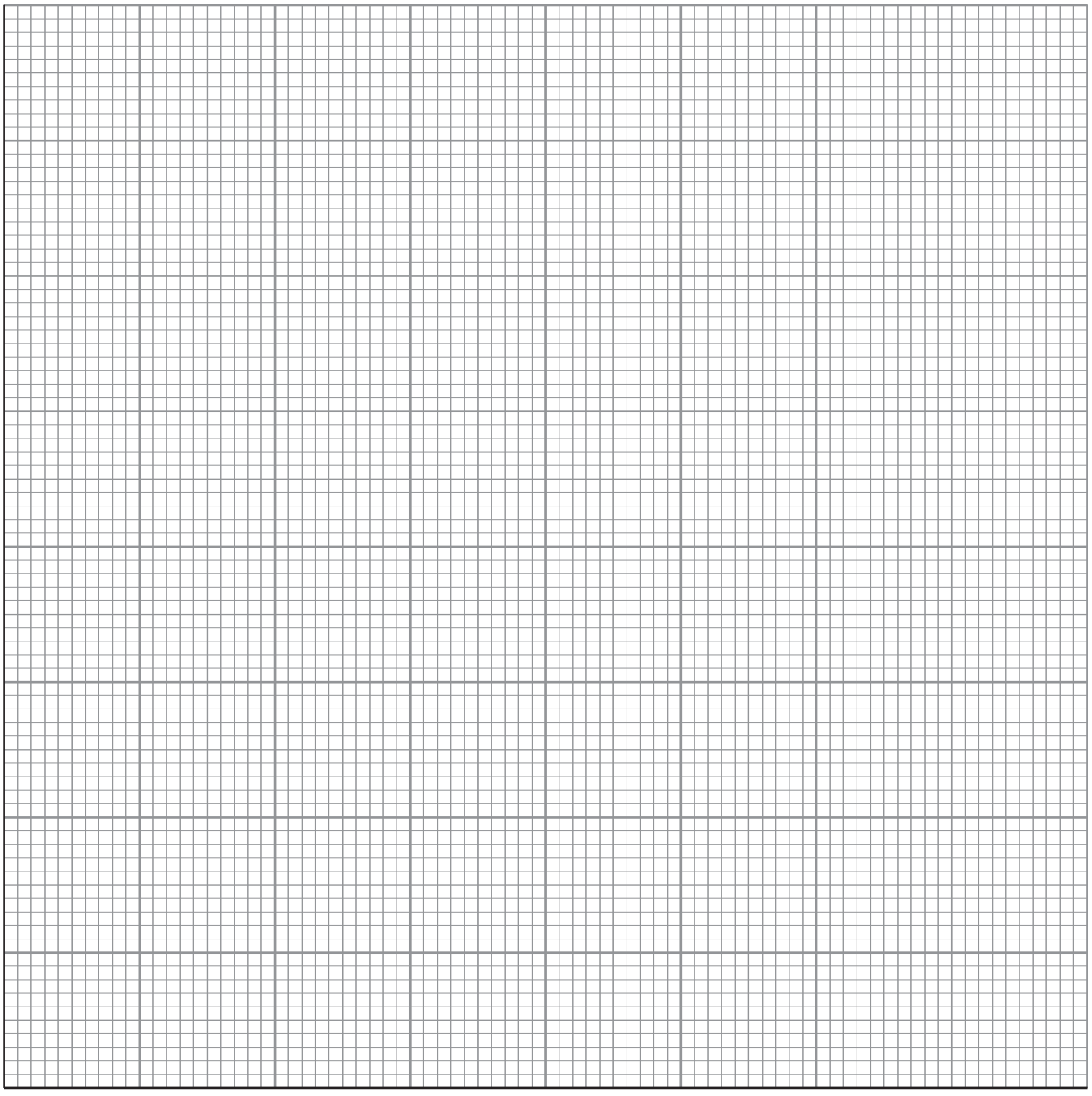
School A	
School B	
School C	
School D	

[4]

Examiner only

(b) On the graph paper below, draw a bar chart to represent the information.

[4]



Examiner only

5. *(a)* Janet thinks of a number.
She divides her number by 6 and adds 10.
The answer she gets is 14.
What number did Janet think of?

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[2]

(b) Solve $y - 6 = 8$.

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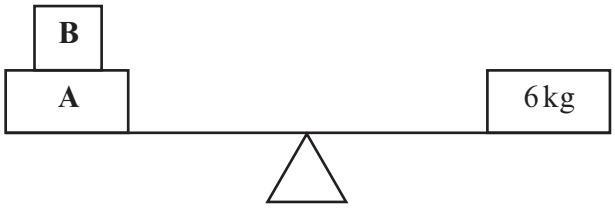
[1]

(c)



The packages **A** and **B** together weigh 6 kg.
Package **A** is twice as heavy as package **B**.
Find the weight of package **A** and find the weight of package **B**.

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Weight of package **A** = ... kg Weight of package **B** = ... kg

[3]

Examiner only

6. Two rectangles, each 12 cm by 4 cm, are placed so as to make a symmetrical cross as shown in the diagram.

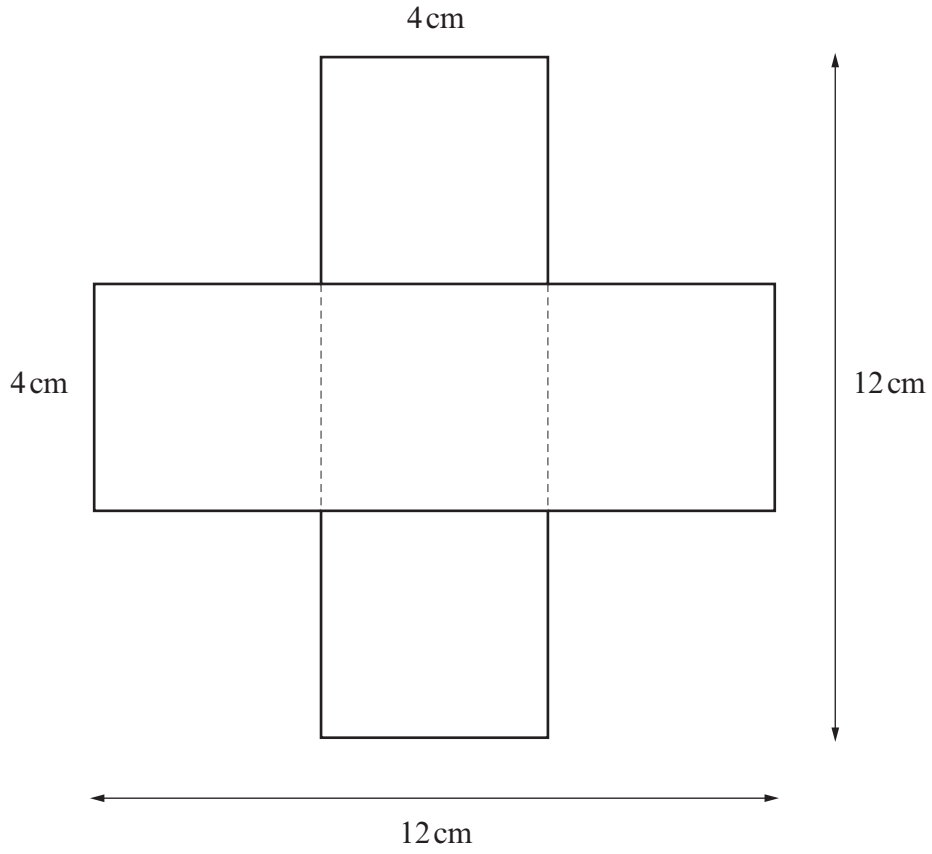

Diagram not drawn to scale

(a) Calculate the perimeter of the cross.

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[3]

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

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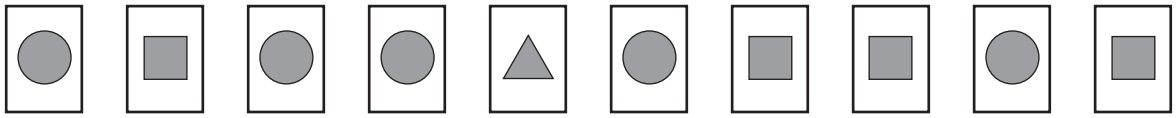
[3]

Examiner only

7. *(a)*

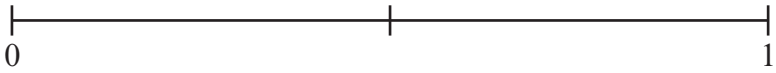


Chris picks one card at random from the ten cards shown above.
On the probability scale shown below, mark the points **A**, **B** and **C** where:

A is the probability that Chris picks a card with  on it.

B is the probability that Chris picks a card with  on it.

C is the probability that Chris picks a card with  on it.



[3]

(b) In a meeting, there are 3 teachers, 12 male pupils and 9 female pupils.
All are equally likely to be chosen as chairperson.
What is the probability that the person chosen as chairperson is a female pupil?

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[2]

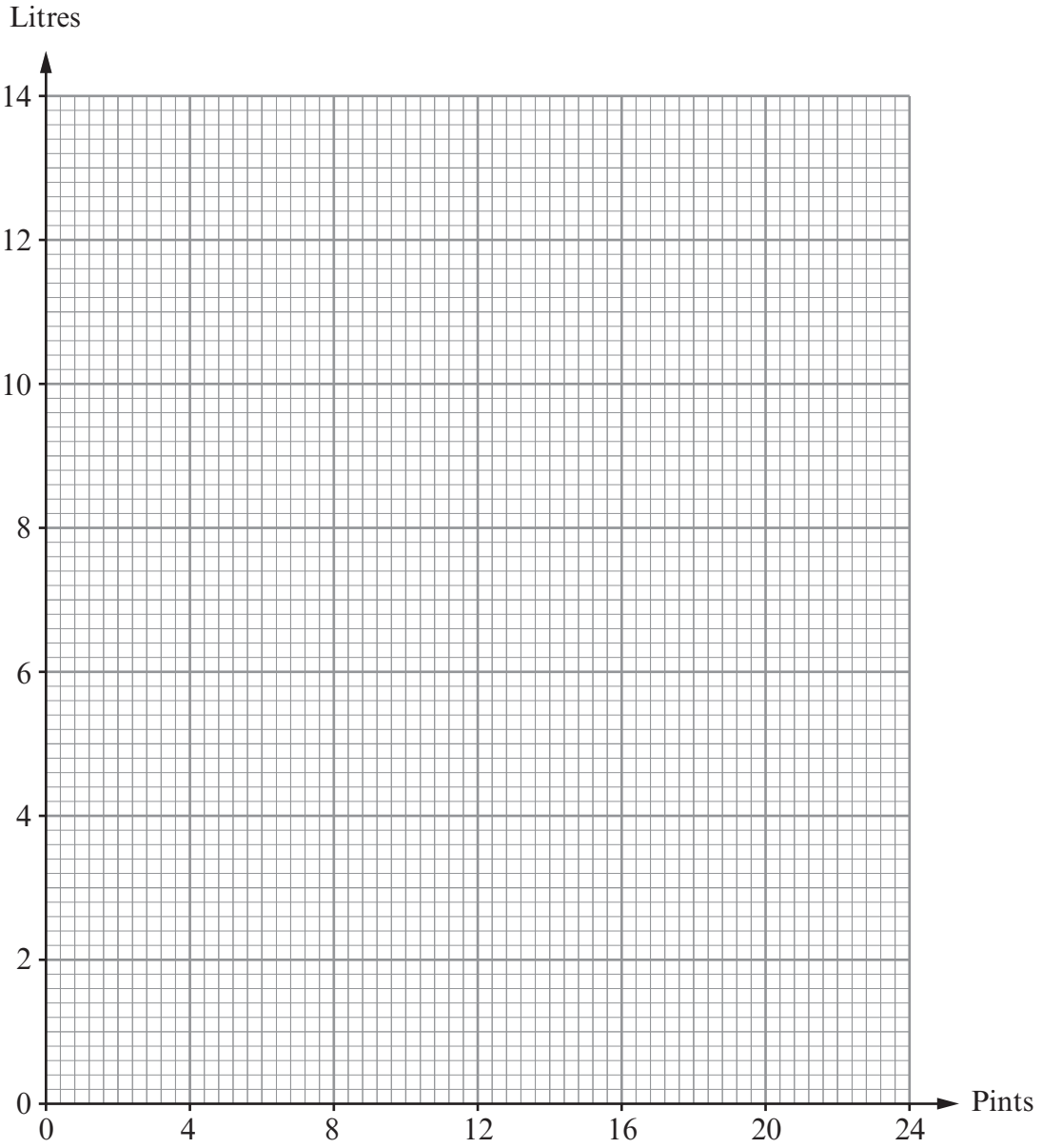
Examiner only

8. *(a)* The volume of liquid in a container can be measured in pints or in litres.
The table shows the number of pints and the number of litres for each of three volumes.

Pints	7	14	21
Litres	4	8	12

Use the data in the table to draw a conversion graph between pints and litres.

[2]



(b) Find an estimate for 45 litres in pints.

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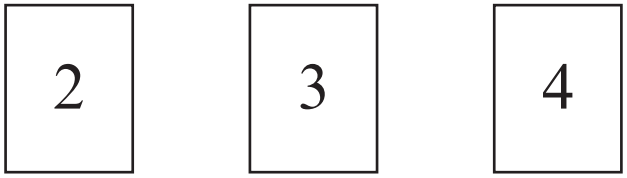
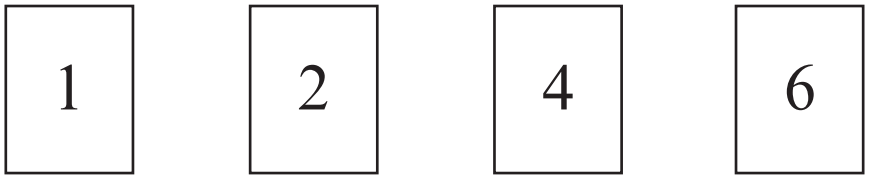
[2]

Examiner only

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



The yellow 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 yellow pack. The player's score is the product of the two numbers.

For example, if the number on the red card is 3 and the number on the yellow card is 2, the player works out $3 \times 2 = 6$ and the player scores 6.

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

Yellow pack			
6	.....	.....	.....
4	.....	.....	.....
2	4	6	8
1	2	3	4
	2	3	4
	Red pack		

[2]

(b) A player wins a prize by getting a score of 4 or less.

What is the probability of a player winning a prize?

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[2]

(c) 180 people each play the game once.
Approximately how many would you expect to win a prize?

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[2]

(d) It costs 50p to play the game once. The prize for getting a score of 4 or less is £1.
If each of the 180 people play the game once, approximately how much profit do you expect the game to make?

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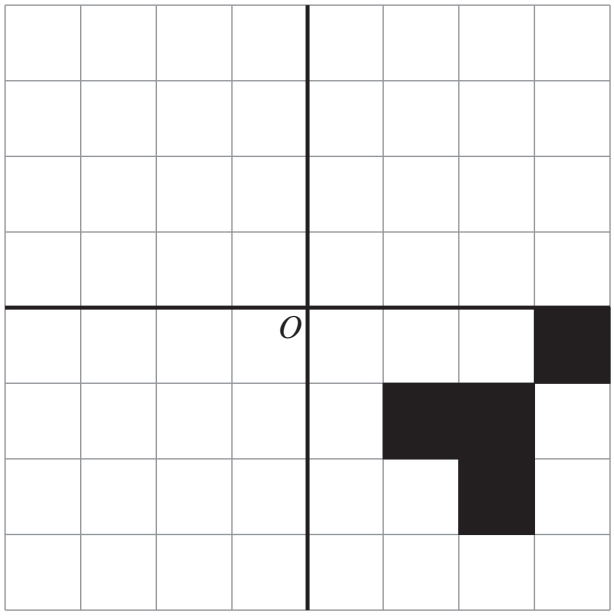
[2]

10. Draw three shapes like the given one, so that the completed pattern has rotational symmetry of order 4 about *O*.

[3]



Examiner only

11. *(a)* Calculate $\frac{3}{8}$ of 56.

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[2]

(b) Find the value of

(i) 4·5 – 1·27,

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(ii) 0·2 × 0·3,

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(iii) $\frac{7}{10} - \frac{2}{5}$.

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[4]

(c) Write down the following numbers correct to 2 significant figures.

(i) 7348

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(ii) 0·00652

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[2]

Examiner only

12. In the diagram below $ABCD$ is a square, the triangle BDE is isosceles with $DE = DB$, and the triangle BEF is equilateral.

Calculate the size of $D\hat{E}F$.

[5]

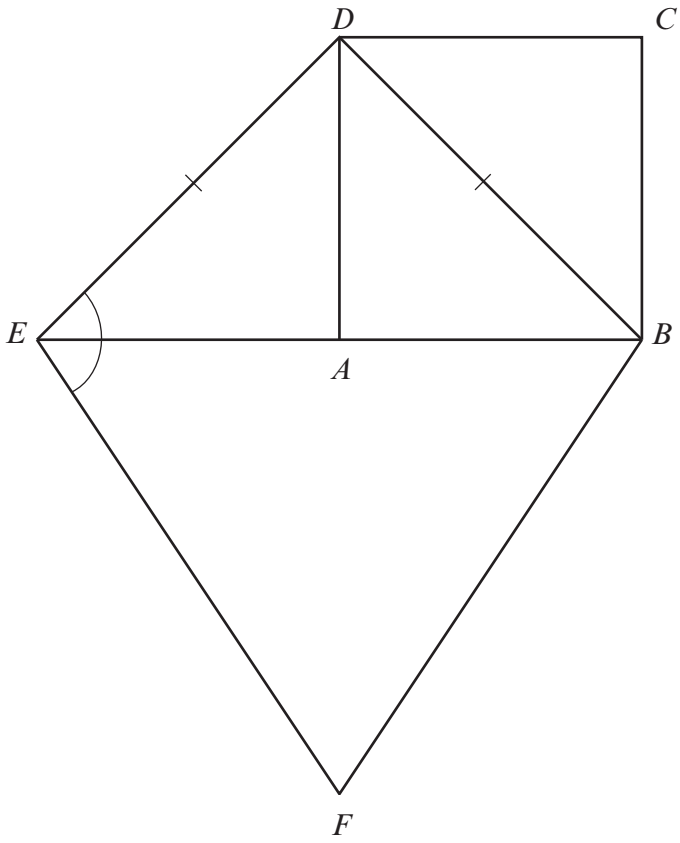

Diagram not drawn to scale

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Examiner only

13. *(a)* Estimate the value of $\frac{207 \times 148}{49}$.

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[2]

(b) Given that $47 \times 235 = 11045$, write down the value of $\frac{1104{\cdot}5}{0{\cdot}47}$.

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[1]

(c) In a quiz, a team scores 13 out of 20. Express this as a percentage.

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[1]

(d) Which of the following fractions is closest to $\frac{2}{5}$?

$\frac{7}{20}$ $\frac{1}{4}$ $\frac{7}{15}$

Show all your working.

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[3]

Examiner only

14. *(a)* Calculate the size of each of the angles marked x, y and z in the diagram below.

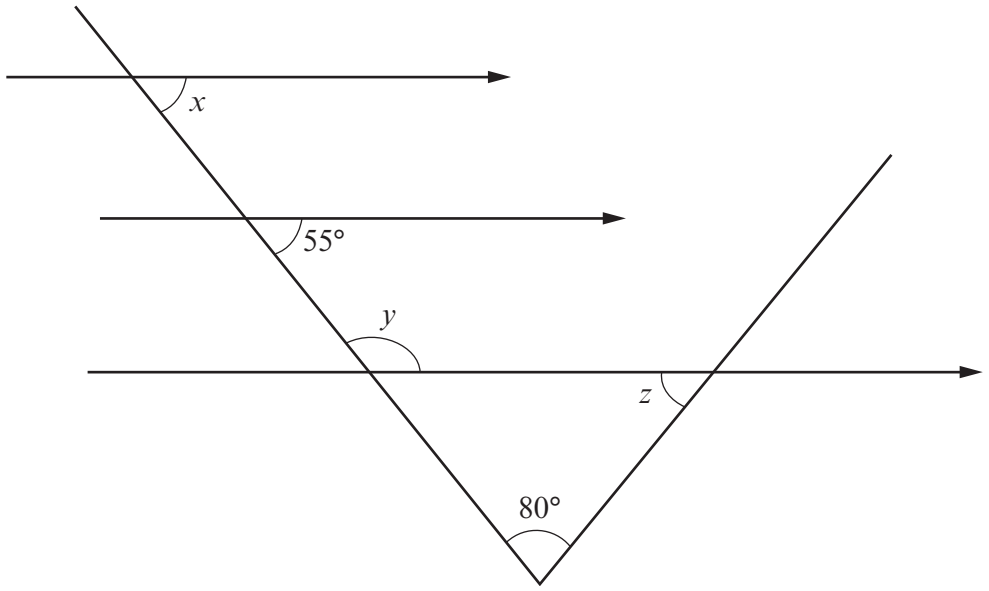

Diagram not drawn to scale

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$x =$ ..... ° $y =$ ..... ° $z =$ ..... °

[4]

(b) Calculate the size of each of the exterior angles of a regular pentagon.

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[3]

Examiner only

15. The table shows some of the values of $y = x^3 - 8$ for values of x from –2 to 4.

(a) Complete the table by finding the values of y for $x = -1$ and $x = 3$.

x	–2	–1	0	1	2	3	4
$y = x^3 - 8$	–16		–8	–7	0		56

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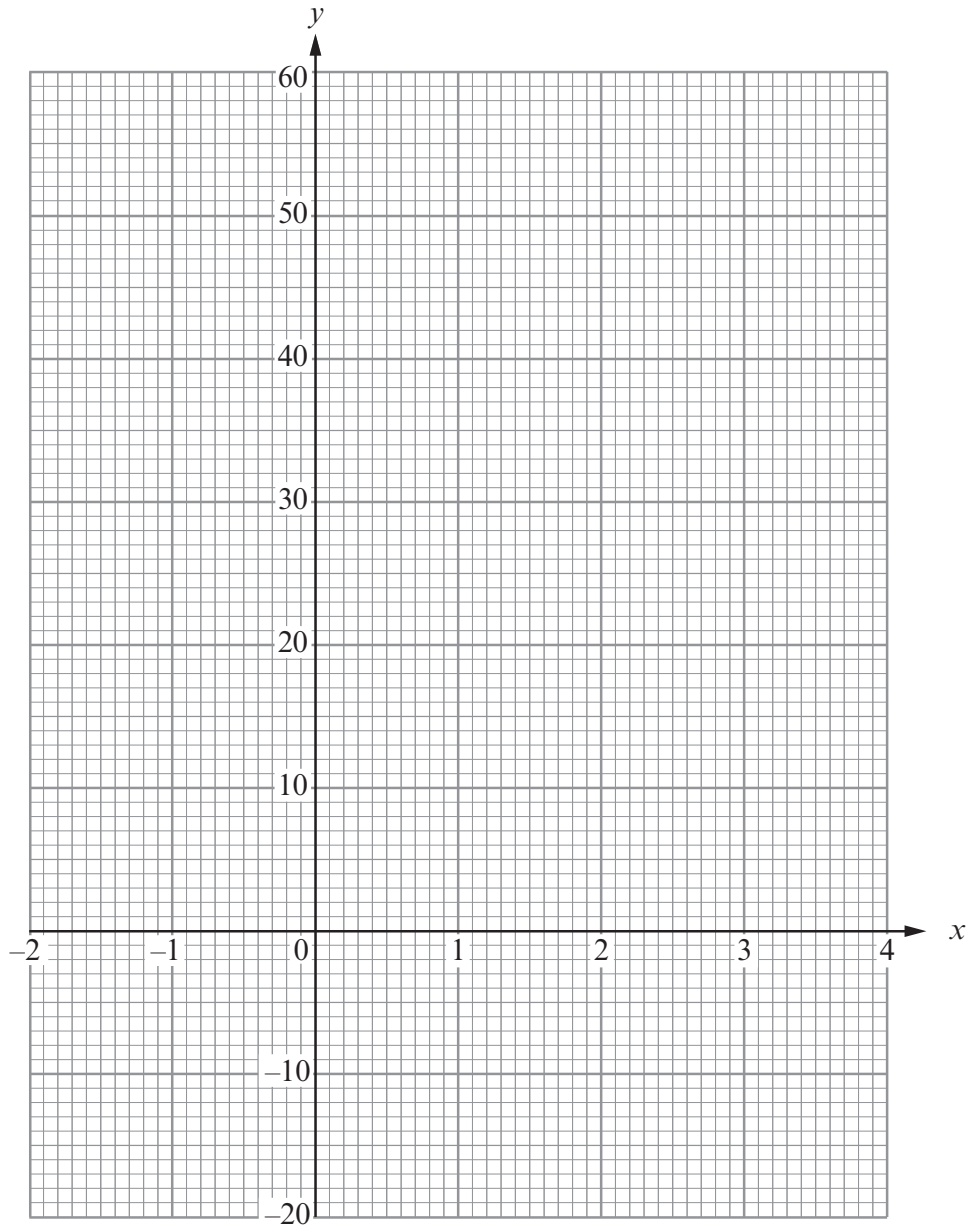
[2]

(b) On the graph paper below, draw the graph of $y = x^3 - 8$ for values of x from –2 to 4.

[2]



Examiner only

(c) Use your graph to solve the equation $x^3 - 8 = 40$.

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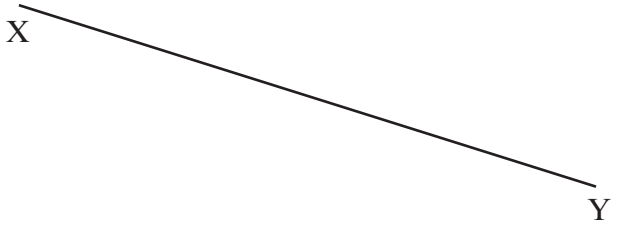
[2]

Examiner only

16. *(a)* Shade the region that satisfies both of the following conditions.

(i) The points are less than 5 cm from X.
(ii) The points are nearer to Y than to X.

[3]



(b)

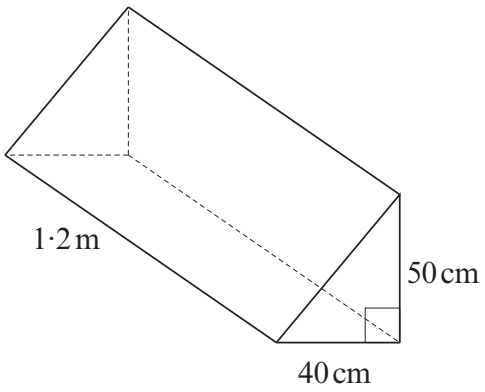


Diagram not drawn to scale

Calculate the volume of the triangular prism, giving your answer in cm^3.

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[4]