Candidate Name	Centre Number	Candidate Number
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WJEC CBAC

GCSE

185/08

MATHEMATICS
FOUNDATION TIER
PAPER 2

A.M. FRIDAY, 11 June 2010

2 hours

For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1	**5**	
2	**4**	
3	**8**	
4	**7**	
5	**4**	
6	**6**	
7	**4**	
8	**4**	
9	**5**	
10	**3**	
11	**4**	
12	**6**	
13	**2**	
14	**4**	
15	**5**	
16	**6**	
17	**4**	
18	**8**	
19	**7**	
20	**4**	
TOTAL MARK		

ADDITIONAL MATERIALS

A calculator will be required for this paper.

INSTRUCTIONS TO CANDIDATES

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 or use the π button on your calculator.

INFORMATION FOR CANDIDATES

You should give details of your method of solution especially when a calculator is used.

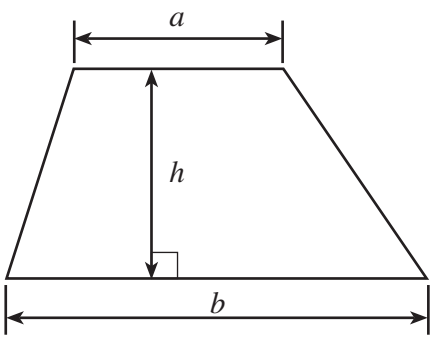
Unless stated, diagrams are not drawn to scale.

Scale drawing solutions will not be acceptable where you are asked to calculate.

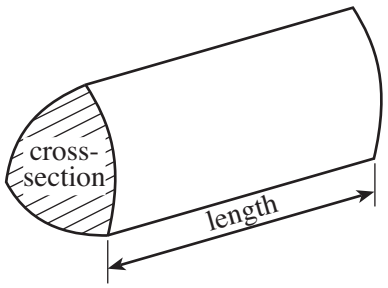
The number of marks is given in brackets at the end of each question or part-question.

Formula List

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



Volume of prism = area of cross-section × length



1. *(a)* Janet goes to a shop that sells office materials.
She buys a desk, 4 lever arch files, 8 post-it pads and 3 packets of paper.
Complete the following table to show her bill for these items.

Item	Cost
1 desk	£56.94
4 lever arch files @ £3.49 each	
8 post-it pads @ £2.76 each	
3 packets of paper @ £6.34 per packet	
Total	

[4]

(b) The shop gives a discount of 10%.
How much discount does Janet get?

.....

.....

[1]

Examiner only

2. Write down the metric unit that is best used to measure

the weight of a person, ...

the width of a book, ...

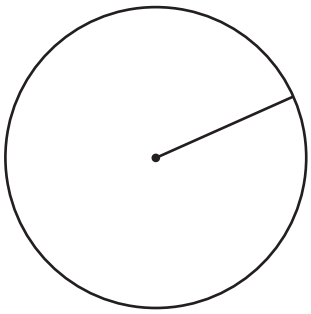
the distance from Calais to Paris, ...

the volume of a kettle. .....

[4]

3. *(a)* Write down the special name of the straight line shown in **each** of the following diagrams.

[3]



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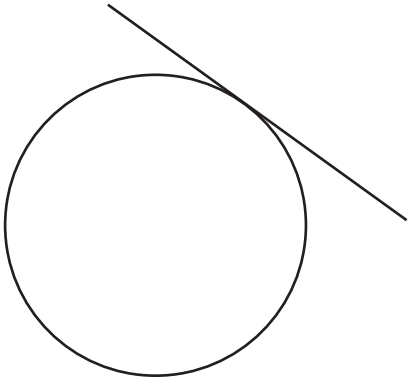

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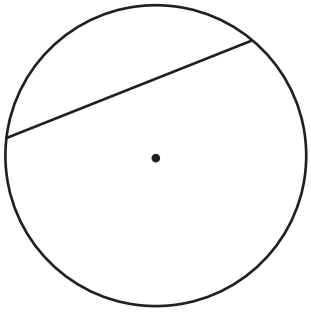

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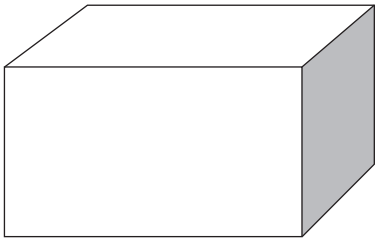
(b) From the list of names below,

hexagon trapezium cube rhombus cuboid cylinder rectangle

write down the special name of **each** of the following shapes.

[3]



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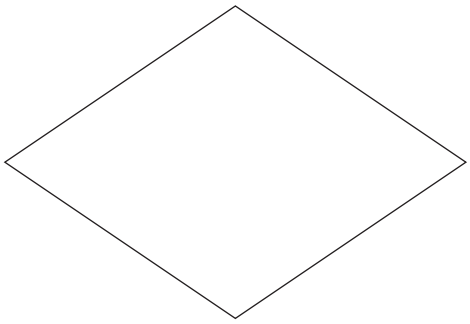

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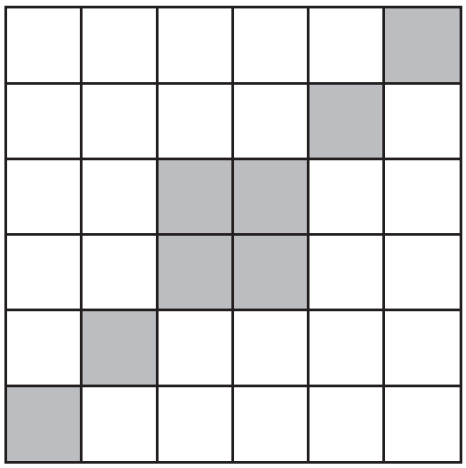
(c) Draw **all** the lines of symmetry on the following figure.

[2]



Examiner only

4. Each of 40 pupils writes down how many pets they have.
When they have more than 3 pets they write down M.
The following table shows their results.

2	0	1	2	1	3	2	M	2	3
1	2	M	2	0	1	1	2	1	3
2	1	0	1	2	M	0	1	2	1
3	2	3	1	1	1	2	1	3	0

(a) Complete the frequency table below.

Number of pets	Tally	Frequency
0		
1		
2		
3		
M		

[2]

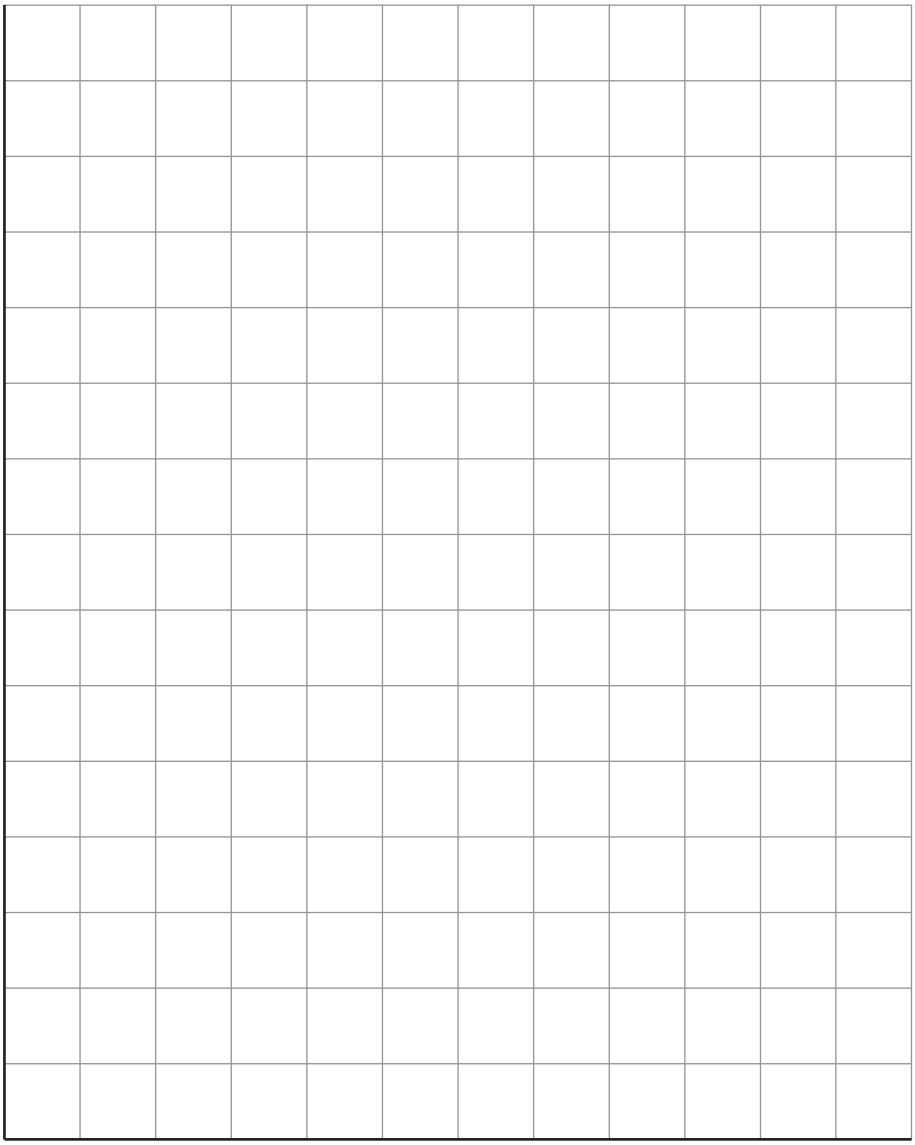
(b) Write down the mode. .....

[1]

(c) Using the squared paper on the next page, draw a suitable bar chart for the data given in the table.

[4]

For use with Question 4



Examiner only

5. The formula for the cost of printing books is

Printing Cost = Number of books × Cost per book + £2000

(a) Find the **Printing Cost** when the **Number of books** is 300 and the **Cost per book** is £9.

.....

.....

.....

.....

[2]

(b) Find the **Cost per book** when the **Printing Cost** is £5000 and the **Number of books** is 600.

.....

.....

.....

.....

[2]

6. In a school the number of pupils in each year group is

90 83 75 81 78 51 53

(a) Find the mean number of pupils in a year group.

.....

.....

.....

.....

[3]

(b) Find the median number of pupils in a year group.

.....

.....

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.....

[2]

(c) Find the range of the number of pupils in a year group.

.....

.....

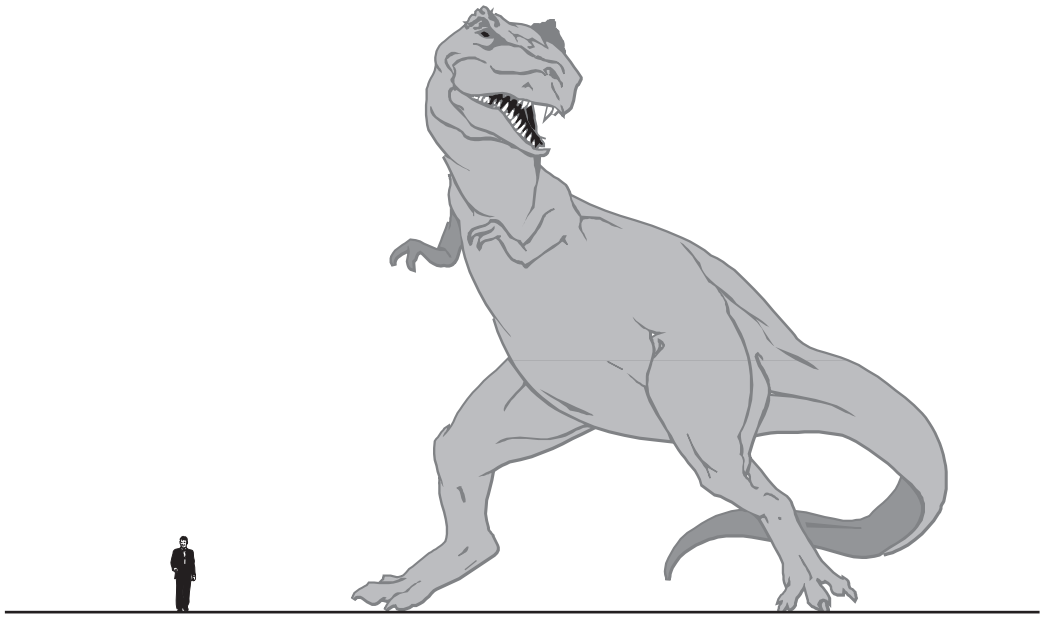
.....

.....

[1]

Examiner only

7.



You must give full details of your working.

The above picture shows a man and a dinosaur.
Write down an estimate for the **actual height** of the man. .....

Using this estimate for the height of the man, estimate the **actual height** of the dinosaur.

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[4]

8. *(a)* Write down 0·07 as a fraction.

.....

.....

[1]

(b) How many cakes each costing 84p can be bought with a £20 note and how much change should there be?

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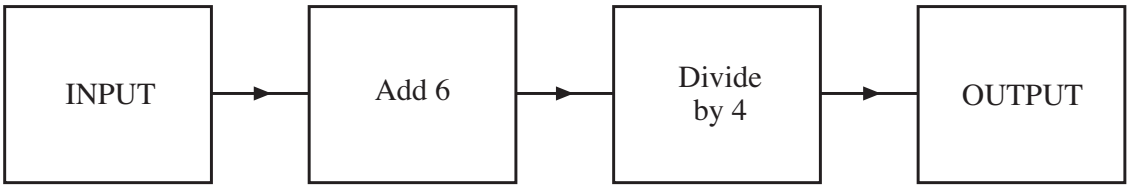
[3]

Examiner only

9. *(a)* The diagram below represents a number machine.



(i) When the INPUT is 14, what is the OUTPUT?

.....

(ii) When the OUTPUT is 7, what is the INPUT?

.....

.....

[3]

(b) Describe, **in words**, the rule for continuing **each** of the following sequences.

(i) 1, 8, 15, 22, ...

Rule: .....

.....

(ii) 4, 12, 36, 108, ...

Rule: .....

.....

[2]

Examiner only

10. *(a)* One day, the temperature in Swansea at 10.00 am was 4°C.
By 3.00 pm the temperature had risen by 8°C.
What was the temperature at 3.00 pm?

.....

.....

[1]

(b) One day, the temperature in Bangor at 2.00 pm was 5°C.
At 11.00 pm the temperature had dropped by 9°C.
What was the temperature at 11.00 pm?

.....

.....

[1]

(c) The temperature inside a freezer was –25°C.
The electricity went off for a couple of hours and the temperature in the freezer became –18°C.
By how many degrees did the temperature change?

.....

.....

[1]

Examiner only

11. Louise and Tim went on holiday to France.

(a) They changed £1200 into euros (€) when the exchange rate was £1 = €1.27.
How many euros did they receive?

.....

.....

.....

.....

[2]

(b) On their return, they changed €486 back into pounds (£), when the exchange rate was £1 = €1.35.
How much did they receive?

.....

.....

.....

.....

[2]

12. *(a)* Write down the next two terms of the following sequence.

17, 16, 13, 8, ..., ... [2]

(b) Solve $4x - 7 = 3$.

.....

.....

[2]

(c) Simplify $3x + 6y + x - 4y$.

.....

.....

[2]

Examiner only

13. The number of paper clips in each of 40 boxes was counted.
The results are summarised in the following table.

Number of paper clips	23	24	25	26	27
Frequency	2	13	14	10	1

How many paper clips were there altogether?

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[2]

14. *(a)* Calculate 46% of 54.

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[2]

(b) There are 140 pupils in Year 9 of which 77 are boys.
What percentage of Year 9 are boys?

.....

.....

.....

.....

[2]

Examiner only

15. A survey is carried out by asking people questions as they come out of a fish and chip shop. A section of the survey questionnaire is shown below.

1. How old are you?

Put a tick ✓ in the box: 15 to 20 ☐ 21 to 30 ☐ 30 to 40 ☐ Older than 40 ☐

2. Do you ever go to a fish and chip shop to buy take-away food?

Put a tick ✓ in the box: Yes ☐ No ☐

3. How did you pay? What method of payment did you use?

.....

.....

(a) Explain why this is a biased survey.

.....

.....

.....

.....

.....

[1]

(b) State **two** criticisms about the design of question 1 in the survey.

(i) .....

.....

.....

(ii) .....

.....

.....

[2]

Examiner only

(c) (i) What is the problem with the design of question 3 in the survey?

.....

.....

(ii) Show how question 3 in the survey could be improved.

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.....

[2]

Examiner only

16.

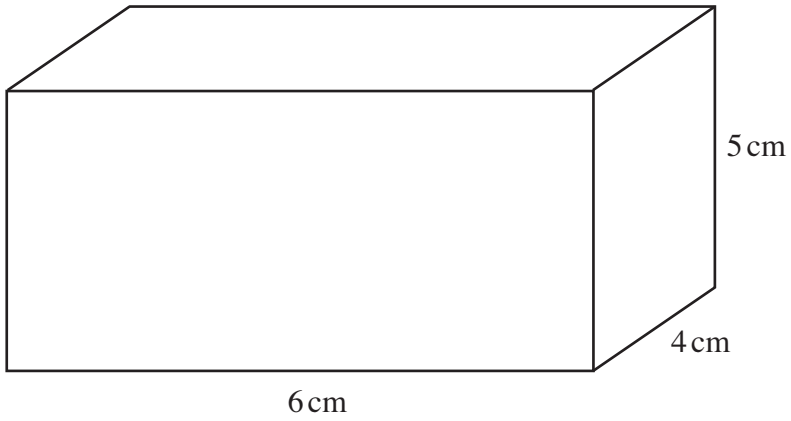

Diagram not drawn to scale.

(a) Calculate the volume of the cuboid shown above, clearly stating the units of your answer.

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[3]

(b) Calculate the total surface area of the cuboid.

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[3]

Examiner only

17. Here is a recipe for spaghetti with a tomato and basil sauce to serve 4 people.

Ingredients to serve 4 people	
For the spaghetti	**For the sauce**
400 g/14 oz plain flour	4 tablespoons olive oil
4 eggs	2 onions
	800 g/28 oz fresh chopped tomatoes
	20 leaves of fresh basil

(a) Complete a version of this recipe to serve 10 people.

Ingredients to serve 10 people	
For the spaghetti	**For the sauce**
..... g/..... oz plain flour	..... tablespoons olive oil
..... eggs	..... onions
	..... g/..... oz fresh chopped tomatoes
	..... leaves of fresh basil

.....

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.....

.....

.....

.....

[3]

(b) Use the information given in the recipe to complete this statement.

100 g is ..... oz

[1]

Examiner only

18. *(a)* Solve $7x + 2 = 3 + 5x$.

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.....

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.....

.....

[3]

(b) Simplify $a^5 \times a^2$.

.....

[1]

(c) Expand $b(b + 3)$.

.....

.....

[2]

(d) Rearrange the formula $e = 4f - 3$ into the form $f =$ .....

.....

.....

.....

.....

[2]

Examiner only

19. *(a)* Michael bought a scooter for £800 on 1st January 2008.
Every year the value of the scooter depreciates by 5% of its value at the start of the year.
Find the value of the scooter on 1st January 2010.

[4]

(b) Catrin has her hair cut every four weeks.
She has about 1 inch cut off every four weeks in order to keep her hair about the same length.
Approximately how fast does her hair grow in millimetres per day?

[3]

Examiner only

20.

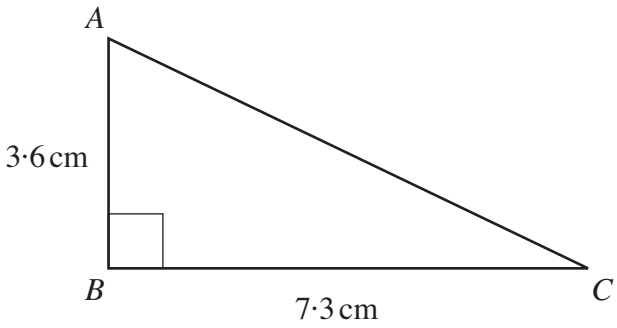

Diagram not drawn to scale.

Find the length of *AC*.
Give your answer to an appropriate degree of accuracy.

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.....

.....

[4]