

Candidate Name	Centre Number	Candidate Number
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New GCSE

4352/01

**MATHEMATICS (UNITISED SCHEME)
UNIT 2: NON-CALCULATOR MATHEMATICS
FOUNDATION TIER**

A.M. TUESDAY, 21 June 2011

$1\frac{1}{4}$ hours

**CALCULATORS ARE
NOT TO BE USED
FOR THIS PAPER**

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.
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.

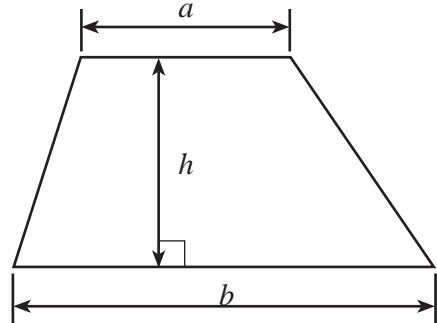
INFORMATION FOR CANDIDATES

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.
You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question 9.

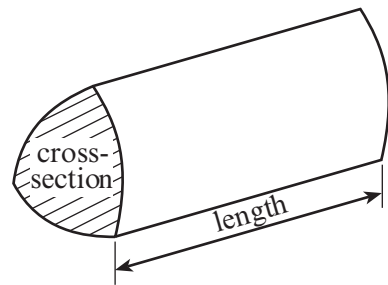
For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1	8	
2	7	
3	4	
4	7	
5	8	
6	7	
7	6	
8	5	
9	6	
10	5	
11	2	
TOTAL MARK		

Formula List

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



Volume of prism = area of cross-section \times length



1. (a) Write down, in figures, the number nine thousand and fifty seven.

..... [1]

- (b) Find the sum of 579 and 286.

.....
.....
..... [1]

- (c) Find the difference between 367 and 178.

.....
.....
..... [1]

- (d) Write 6473

- (i) correct to the nearest 10,

..... [1]

- (ii) correct to the nearest 100.

..... [1]

- (e) Write down the value of the 8 in the number 58231.

..... [1]

- (f) Write down all the factors of 25.

.....
..... [2]

2. (a) Janet buys 5 yoghurt bars each costing 67p with two £2 coins.
How much change should Janet be given?

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.....

.....

[2]

- (b) **Showing all your working**, find an **estimate** for the value of 48.7×21 .

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.....

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[2]

- (c) Write $\frac{1}{5}$ as a decimal.

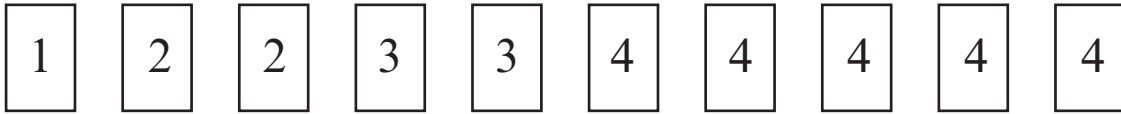
Write 24% as a decimal.

Write $\frac{1}{5}$, 24%, 0.18 in ascending order.

.....

[3]

3. (a)



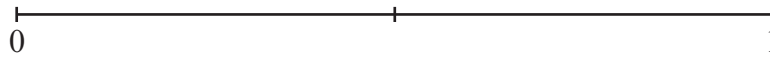
Chris puts the ten cards, shown above, into a bag, and then picks one card at random from the bag.

On the probability scale shown below, mark the points **A**, **B** and **C** where

A is the probability that Chris picks a card with 4 on it,

B is the probability that Chris picks a card that does NOT have a 2 on it,

C is the probability that Chris picks a card with 5 on it.



[3]

(b) Circle the best expression from those given below to describe the chance of the event **B** occurring.

impossible **unlikely** **an even chance** **likely** **certain**

[1]

4. (a) Draw an accurate net for the **triangular prism** sketched below.

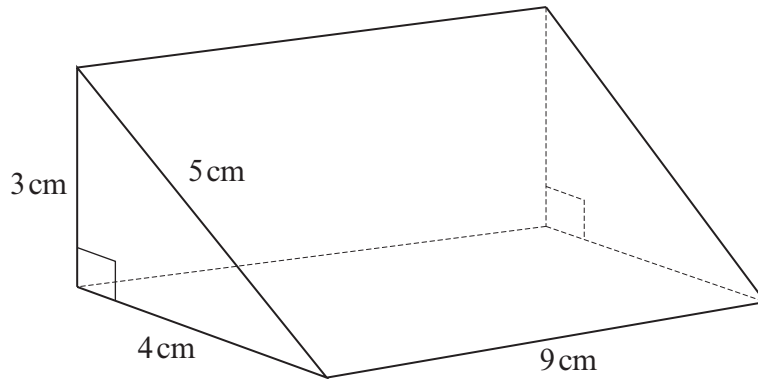
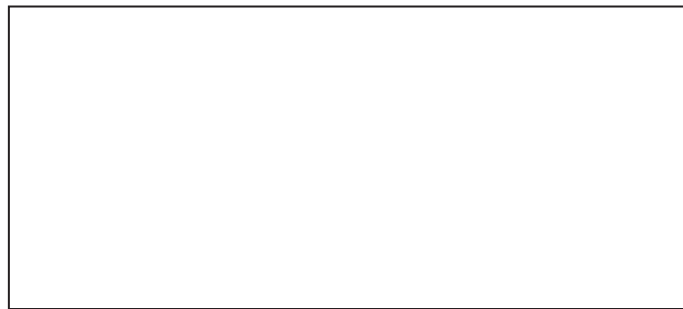


Diagram not drawn to scale

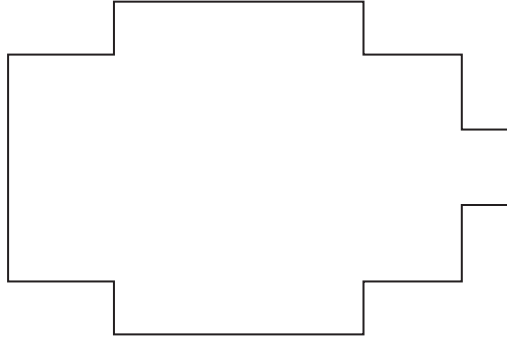
The base, measuring 9 cm by 4 cm, has been drawn for you.

[4]

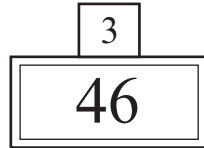


(b) Draw all the lines of symmetry on the following two diagrams.

[3]

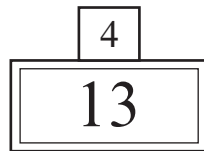


5. The diagram shows a counting machine.
The 46 is the starting number and the 3 is the stepping number.



When the machine is started, it would show 49, 52, 55, and so on.

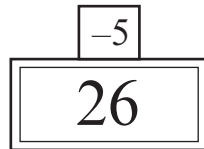
- (a) Write down the next 3 numbers shown when the following machine is started.



.....
[1]

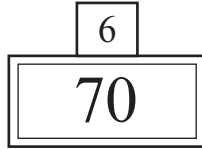
The machine can do negative steps.

- (b) Write down the next 3 numbers shown when the following machine is started.



.....
[1]

- (c) Explain how you can decide whether or not the following machine will show the number 134 at some time. (You should not attempt to write down all the values the machine will show.)



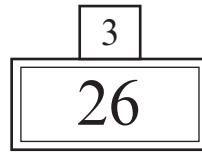
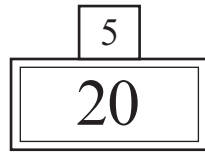
.....

.....

.....

[2]

- (d) The following two machines are started at the same time.



After how many steps will they show the same number and what is that number?

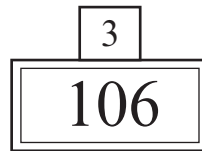
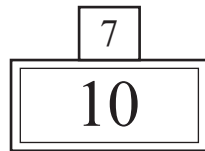
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[2]

- (e) Explain how you can decide whether or not the following two machines will show the same number at some time. (You should not attempt to write down all the values the machines will show.)



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.....

.....

[2]

6. (a) Simplify

(i) $d + 3d + 6d,$

.....
[1]

(ii) $4a + 3b - a + 5b.$

.....
.....
[2]

(b) Solve

(i) $x + 7 = 10,$

.....
[1]

(ii) $\frac{x}{4} = 12.$

.....
[1]

(c) (i) Expand $7(x - 3).$

.....
[1]

(ii) Factorise $x^2 + 5x.$

.....
[1]

7. A box contains five balls numbered 1, 3, 5, 7 and 9 respectively.
 A bag contains four balls numbered 1, 2, 3 and 4 respectively.
 In a game, a player takes one ball at random from the box and one ball at random from the bag.
 The score for the game is found by using the number on the ball from the bag as the tens digit and the number on the ball from the box as the units.

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

4	41	43	49
3	31	33	39
2	21	23	29
1	11	13	15	17	19
	1	3	5	7	9
		box			

[2]

- (b) A player wins if the score obtained is between 25 and 35 inclusive.
 Find the probability that a player wins.

.....

.....

[2]

- (c) How many times should a player expect to win in 100 plays of the game?

.....

.....

[2]

8. Triangles ABC and ADE are equilateral.
 Triangle ACD is isosceles with $AC = CD$ and BCD is a straight line.
 Explain clearly, showing all your steps, why BD is perpendicular to DE .

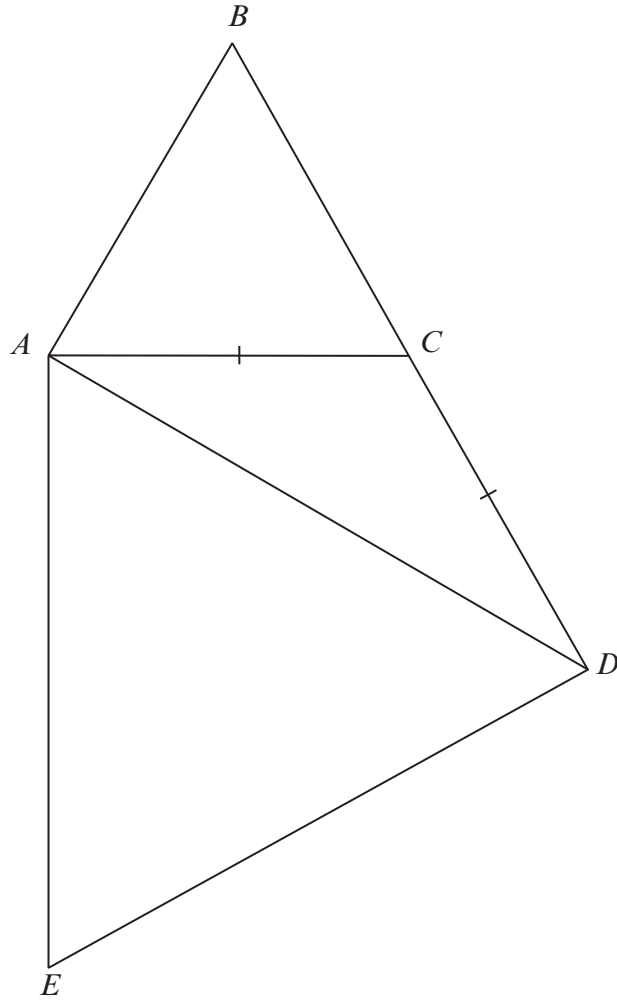


Diagram not drawn to scale

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[5]

10. The table shows values of $y = 2x^2 - 5x - 12$ for values of x from -3 to 5 .

x	-3	-2	-1	0	1	2	3	4	5
$y = 2x^2 - 5x - 12$	21	6	-5	-12	-15	-14		0	13

(a) Complete the table above.

..... [1]

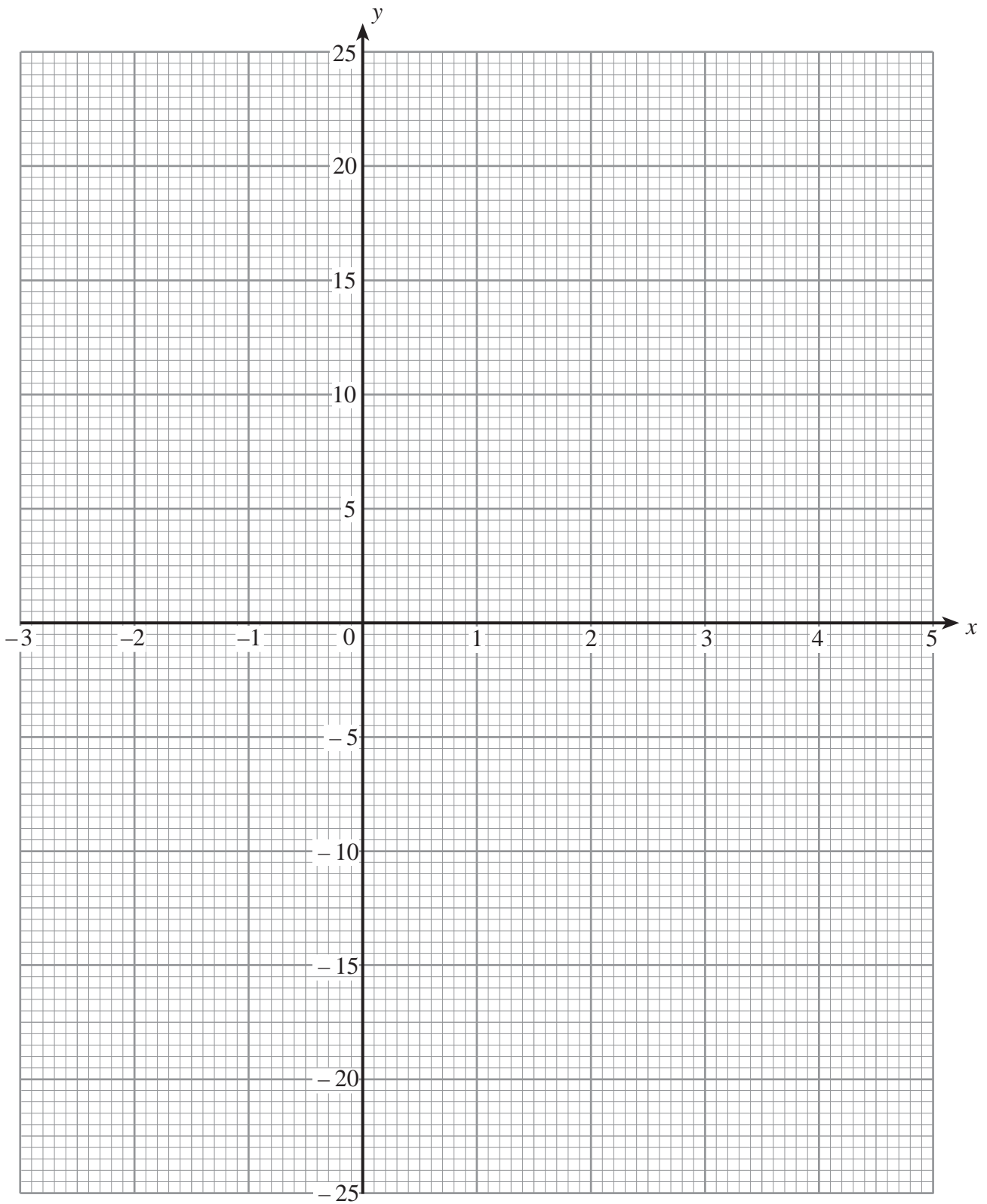
(b) On the graph paper opposite draw the graph of $y = 2x^2 - 5x - 12$ for the values of x between -3 and 5 .

[2]

(c) Draw the line $y = -2$ on your graph paper and write down the x -coordinates of the points where this line intersects the curve $y = 2x^2 - 5x - 12$.

.....

 [2]



11. Michelle has been given 6 equations and she has been asked to draw 6 graphs. Before starting, she looks at the equations.

$$y = 3x$$

$$y = x$$

$$y = \frac{1}{2}x$$

$$y = 2x + 5$$

$$y = 4x + 2$$

$$y = 2x + 4$$

- (a) Michelle says, “the steepest graph will be $y = 2x + 5$ ”.
Is Michelle correct?
You must give a reason for your answer.

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[1]

- (b) Michelle also says, “no two graphs will be parallel to each other”.
Is she correct?
You must give a reason for your answer.

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[1]