

Surname						Other Names					
Centre Number						Candidate Number					
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For Examiner's Use

General Certificate of Secondary Education
November 2008



MATHEMATICS (SPECIFICATION A)
Foundation Tier
Paper 1 Non-calculator

4301/1F
F

Thursday 6 November 2008 9.00 am to 10.30 am

<p>For this paper you must have:</p> <ul style="list-style-type: none"> mathematical instruments. <p>You must not use a calculator.</p>	
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For Examiner's Use	
Pages	Mark
3	
4–5	
6–7	
8–9	
10–11	
12–13	
14–15	
16–17	
18–19	
TOTAL	
Examiner's Initials	

Time allowed: 1 hour 30 minutes

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Answers written in margins or on blank pages will not be marked.
- Do all rough work in this book.

Information

- The maximum mark for this paper is 100.
- The marks for questions are shown in brackets.
- You may ask for more answer paper, graph paper and tracing paper. This must be tagged securely to this answer booklet.

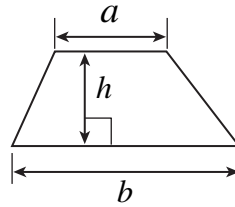
Advice

- In all calculations, show clearly how you work out your answer.

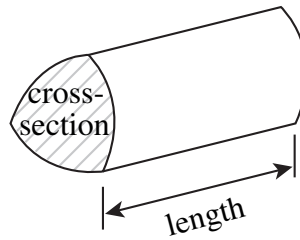


Formulae Sheet: Foundation Tier

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

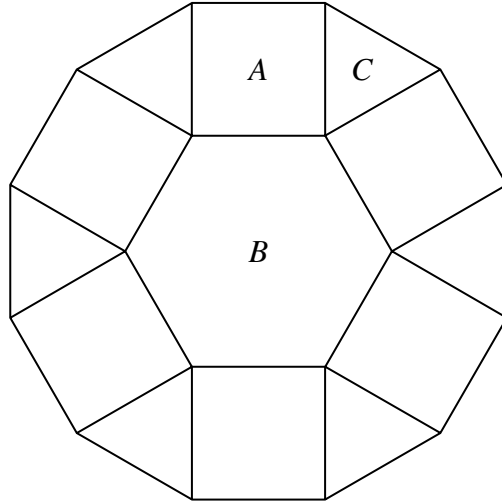


Volume of prism = area of cross-section \times length



Answer **all** questions in the spaces provided.

- 1 This pattern is made using three regular shapes, *A*, *B* and *C*.



- 1 (a) Write down the names of shape *A* and shape *B*.

Answer Shape *A*

Shape *B*

(2 marks)

- 1 (b) What special type of triangle is shape *C*?

Answer Shape *C*

(1 mark)

- 2 Draw arrows to match each fraction with its equivalent percentage.
The first one has been done for you.

$\frac{1}{2}$	20%
$\frac{1}{4}$	25%
$\frac{3}{4}$	50%
$\frac{1}{5}$	70%
$\frac{7}{10}$	75%

(3 marks)

Turn over ►



3 Here are some number cards.

1**2****3****4****5**

Using three different cards, write down

3 (a) the largest three digit number,

--	--	--

(1 mark)

3 (b) the smallest even three digit number,

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(2 marks)

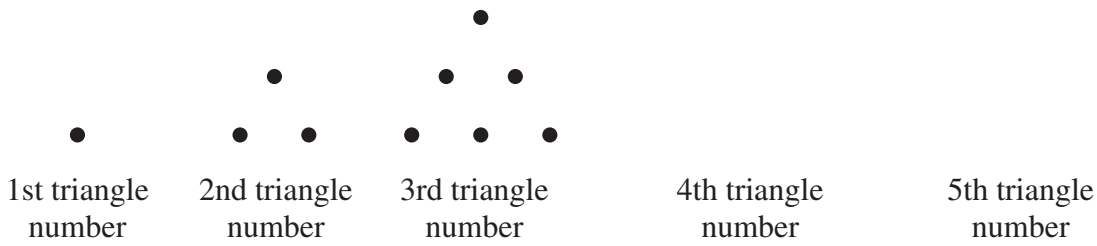
3 (c) a three digit number that is a multiple of 3.

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(1 mark)



4 Here is a pattern of dots to show the triangle numbers.



4 (a) Continue the pattern to show the 4th and 5th triangle numbers. (2 marks)

4 (b) Complete the sequence of triangle numbers: 1, 3, 6, , (1 mark)

4 (c) (i) Write down the 6th triangle number.
 Answer (1 mark)

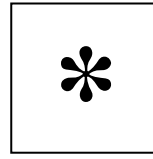
4 (c) (ii) Explain how you found the 6th triangle number without drawing the pattern.

 Answer (1 mark)

Turn over for the next question



5 Glyn has three cards with symbols on them.



Each symbol stands for a different whole number.

Glyn knows that



+



= 7



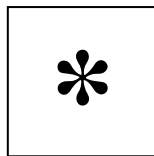
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= 3



×



= 6

What number does each symbol stand for?

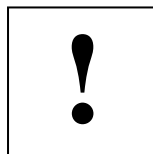
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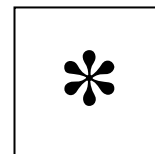
Answer



=



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(3 marks)



- 6 (a) Measure and write down the length of the line AB .



Answer cm (1 mark)

- 6 (b) Mark a point that is half way along the line AB .
Label the point X .

(1 mark)

- 6 (c) Draw a line from A at right angles to the line AB .

(1 mark)

- 7 Complete the following

7 (a) $73 + \dots = 100$

..... (1 mark)

7 (b) $100 - \dots = 65$

..... (1 mark)

7 (c) $100 \times \dots = 240$

..... (1 mark)

7 (d) $\sqrt{100} = \dots$

(1 mark)

7 (e) $\dots \div 0.5 = 100$

..... (1 mark)



8 The pictogram shows the amount of money that five students raised for charity.



8 (a) Who raised the most money?

Answer (1 mark)

8 (b) How much money did Roshna raise?

Answer £ (1 mark)

8 (c) How much money did the five students raise altogether?

.....
.....

Answer £ (2 marks)

8 (d) Sanjay raised £42 for the same charity.

Explain why it may be difficult to show his amount on the pictogram.

.....
.....

(1 mark)



9 The table shows the temperature at different times in Oslo on 1st January 2008.

Time	Temperature
Midnight	– 5° C
4 am	– 8° C
8 am	– 2° C
Midday	7° C
4 pm	3° C
8 pm	1° C

9 (a) Write down

9 (a) (i) the highest temperature,

Answer °C (1 mark)

9 (a) (ii) the lowest temperature.

Answer °C (1 mark)

9 (b) Work out the difference in the temperature between 4 am and 8 am.

.....

Answer °C (1 mark)

10 The table shows how to work out powers of 4

$4^2 = 4 \times 4$	=	16
$4^3 = 4 \times 4 \times 4$	=	64
$4^4 = 4 \times 4 \times 4 \times 4$	=	256

10 (a) Write down the next line in the table.

.....

.....

(2 marks)

10 (b) What will be the units digit in 4^9 ?

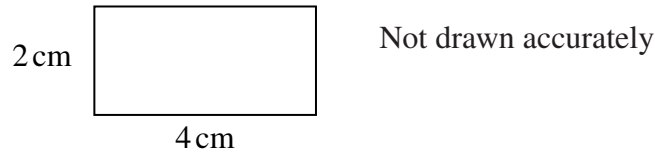
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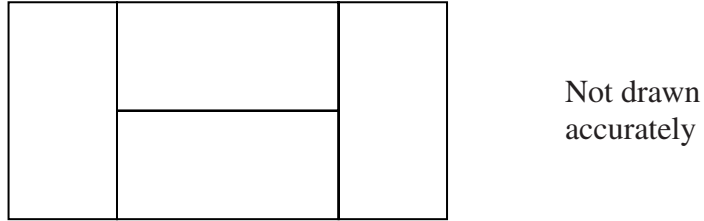
(1 mark)



11 The diagram shows the measurements of a rectangle.



Four of the rectangles are arranged to form a larger rectangle.



11 (a) Work out the perimeter of the larger rectangle.

.....

Answer cm (2 marks)

11 (b) Work out the area of the larger rectangle.

.....

Answer cm² (2 marks)



12 Jacob has 3 red counters and 7 blue counters.
Tony has 10 red counters.
Emily has only blue counters.

12 (a) Jacob puts his counters into a bag.

What is the probability of choosing a red counter from the bag?

Answer (1 mark)

12 (b) Tony adds his counters to the bag.

What is the probability of choosing a red counter now?

.....

Answer (2 marks)

12 (c) Emily adds her counters to the bag.

The probability of choosing a red counter now is $\frac{1}{2}$

How many blue counters did Emily have?

.....

.....

Answer (2 marks)

Turn over for the next question



13 (a) Write down the next term for each of the following sequences.

Give the rule for each sequence.

13 (a) (i) 7, 13, 19, 25,

Rule (2 marks)

13 (a) (ii) 11, 8, 5, 2,

Rule (2 marks)

13 (b) Find the n th term of this sequence.

6, 10, 14, 18,

.....
.....

Answer (2 marks)

14 John owns a camera shop.
He buys 25 cameras for £60 each.
He sells the cameras for a total of £2000

How much profit does he make?
You **must** show all your working.

.....
.....
.....
.....
.....

Answer £ (4 marks)



15 Solve the following equations.

15 (a) $x + 3 = 10$

Answer $x = \dots\dots\dots$ (1 mark)

15 (b) $2x = 10$

Answer $x = \dots\dots\dots$ (1 mark)

15 (c) $3x - 8 = 10$

.....
Answer $x = \dots\dots\dots$ (2 marks)

15 (d) $5(x + 4) = 10$

.....
.....
Answer $x = \dots\dots\dots$ (3 marks)

15 (e) $11 + \frac{x}{3} = 15$

.....
.....
.....
Answer $x = \dots\dots\dots$ (2 marks)

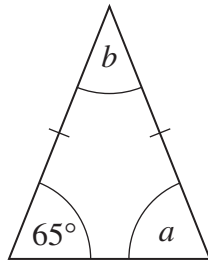
16 Claire buys 40 bulbs.
25% are crocus bulbs, $\frac{1}{5}$ are tulip bulbs and the rest are daffodil bulbs.

How many daffodil bulbs does she buy?

.....
.....
.....
Answer (3 marks)



17 Two sides of this triangle are equal in length.



Not drawn accurately

17 (a) What special name is given to this type of triangle?

Answer (1 mark)

17 (b) (i) Write down the value of a .

Answer $a =$ degrees (1 mark)

17 (b) (ii) Work out the value of b .

.....
.....

Answer $b =$ degrees (2 marks)

18 In a sale DVDs are sold at one price and CDs at a different price.

Ryan buys two DVDs and one CD at a total cost of £34

Jade buys two DVDs and two CDs at a total cost of £44

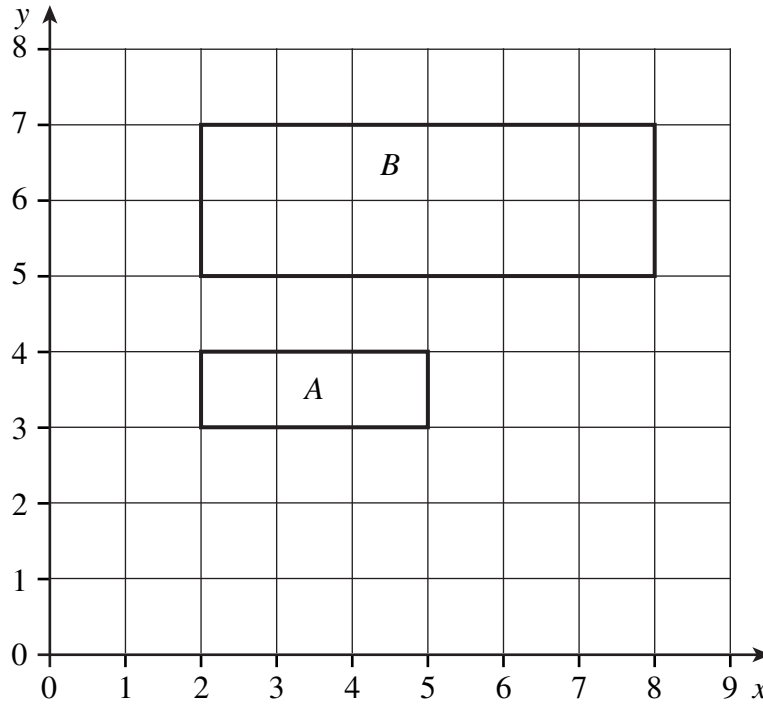
What is the cost of one DVD?

.....
.....
.....
.....
.....

Answer £ (3 marks)



19 Rectangle B is an enlargement of rectangle A .



19 (a) Write down the scale factor of the enlargement.

Answer (1 mark)

19 (b) Write down the coordinates of the centre of the enlargement.

Answer (..... ,) (1 mark)

20 Andy's salary is £24 000 per year.
He is paid the same amount each month.
He is given a pay rise of 10%.

Calculate his new **monthly** salary.
You **must** show all your working.

.....

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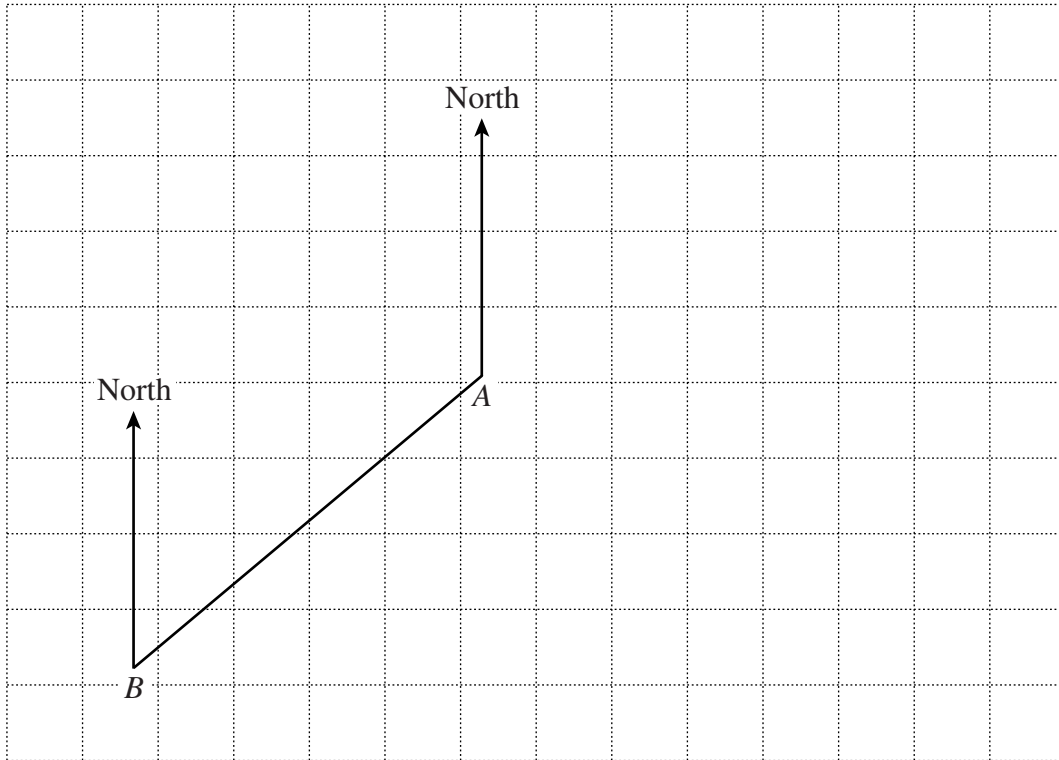
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Answer £ (4 marks)



- 21** A helicopter flies from *A* to *B*.
 The diagram shows the position of *A* and *B*.
 The diagram is drawn to scale.

Scale: 1 cm represents 50 km



- 21** (a) (i) Use the diagram to find the actual distance from *A* to *B*.

.....

Answer km (1 mark)

- 21** (a) (ii) Measure and write down the three figure bearing of *B* from *A*.

Answer ° (1 mark)

- 21** (b) The helicopter then flies to *C*.
 The bearing of *C* from *A* is 110°
 The bearing of *C* from *B* is 080°

Mark the position of *C* on the diagram.

(3 marks)



22 The table shows the ages of 40 people in a village.

Age, x (years)	Frequency
$0 < x \leq 20$	4
$20 < x \leq 40$	12
$40 < x \leq 60$	16
$60 < x \leq 80$	6
$80 < x \leq 100$	2

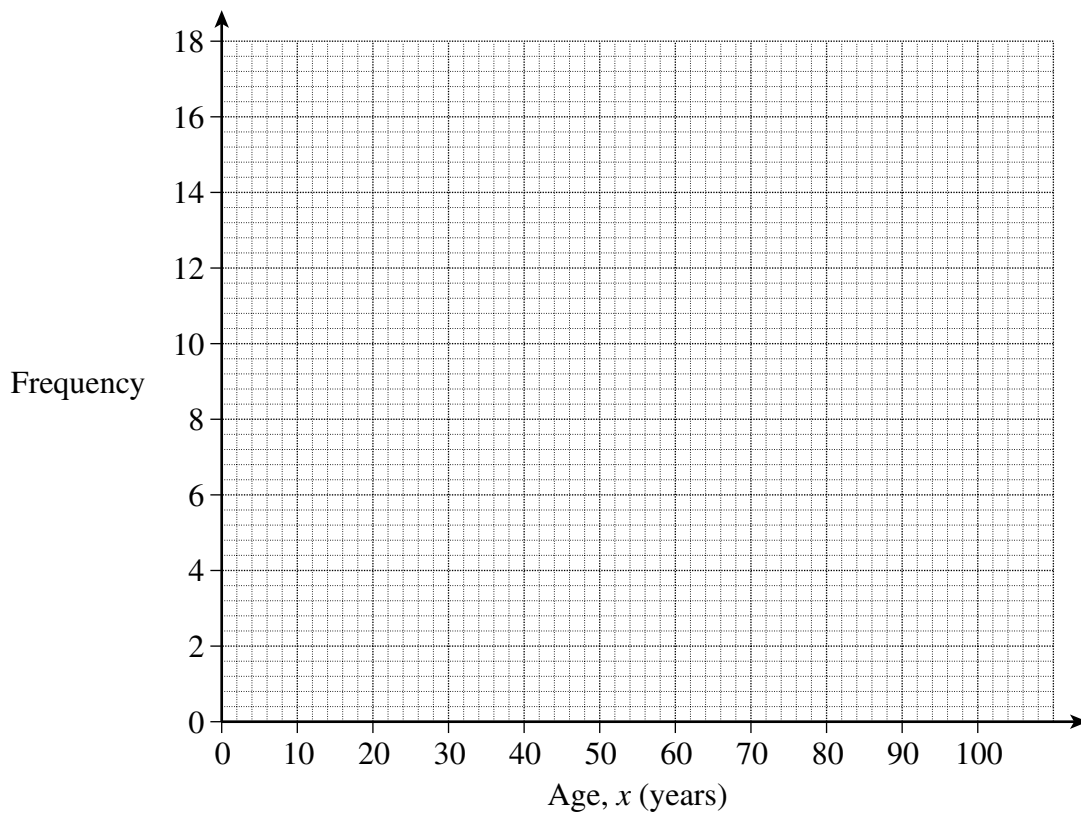
22 (a) How many people are more than 60 years old?

Answer (1 mark)

22 (b) Write down the modal class for the ages of the people.

Answer $< x \leq$ (1 mark)

22 (c) Draw a frequency polygon to represent the data.

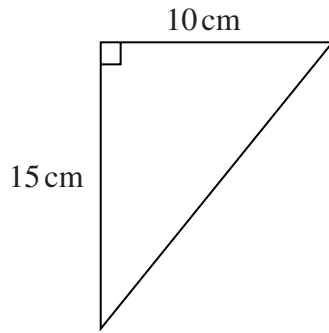


(2 marks)

Turn over ►



23 (a) Find the area of this triangle.



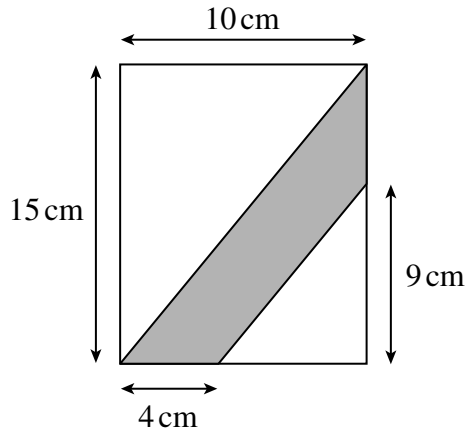
Not drawn accurately

.....

.....

Answer cm² (2 marks)

23 (b) The shaded shape below is cut from a piece of rectangular card measuring 10 cm by 15 cm.



Not drawn accurately

Calculate the area of the shaded shape.
State the units of your answer.
You **must** show your working.

.....

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Answer (4 marks)



24 (a) Find the Highest Common Factor (HCF) of 8 and 12

.....
.....

Answer (2 marks)

24 (b) Find the Least Common Multiple (LCM) of 8 and 12

.....
.....

Answer (2 marks)

END OF QUESTIONS



There are no questions printed on this page

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