

**GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS B (MEI)**

B292B

Paper 2 Section B (Foundation Tier)

Candidates answer on the Question Paper

OCR Supplied Materials:
None

- Other Materials Required:**
- Geometrical instruments
 - Scientific or graphical calculator
 - Tracing paper (optional)

**Friday 11 June 2010
Morning**

Duration: 1 hour



Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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INSTRUCTIONS TO CANDIDATES

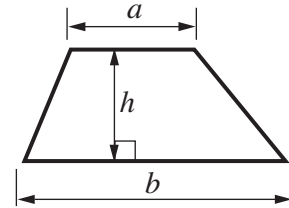
- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Show all your working. Marks may be given for a correct method even if the answer is incorrect.
- Answer **all** the questions.
- Do **not** write in the bar codes.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your Candidate Number, Centre Number and question number(s).

INFORMATION FOR CANDIDATES

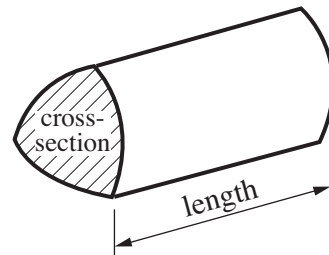
- The number of marks is given in brackets [] at the end of each question or part question.
- Section B starts with question 12.
- You are expected to use a calculator in Section B of this paper.
- Use the π button on your calculator or take π to be 3.142 unless the question says otherwise.
- The total number of marks for this Section is **50**.
- This document consists of **12** pages. Any blank pages are indicated.

Formulae Sheet: Foundation Tier

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



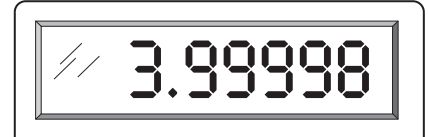
Volume of prism = (area of cross-section) \times length

**PLEASE DO NOT WRITE ON THIS PAGE**

- 12 Sam is using his calculator to answer some questions.
The displays on his calculator are shown.

For each one, write down a sensible rounded answer.

- (a) A number calculation.



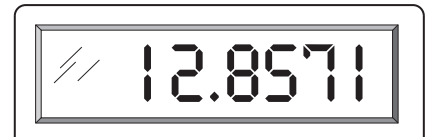
(a) [1]

- (b) A money calculation in pounds.




(b) £ [1]

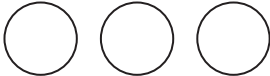

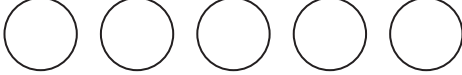
- (c) Finding the number of eggs for a recipe.



(c) [1]

13 The pictogram shows the number of hours that one student spent on different activities in a day.

Key:  represents 2 hours

Working	
Eating	
Sleeping	
Leisure activities	

(a) How many hours were spent Sleeping?

(a) hours [1]

(b) The remaining hours were spent on Leisure activities.

Fill in the extra row on the pictogram to show this information.

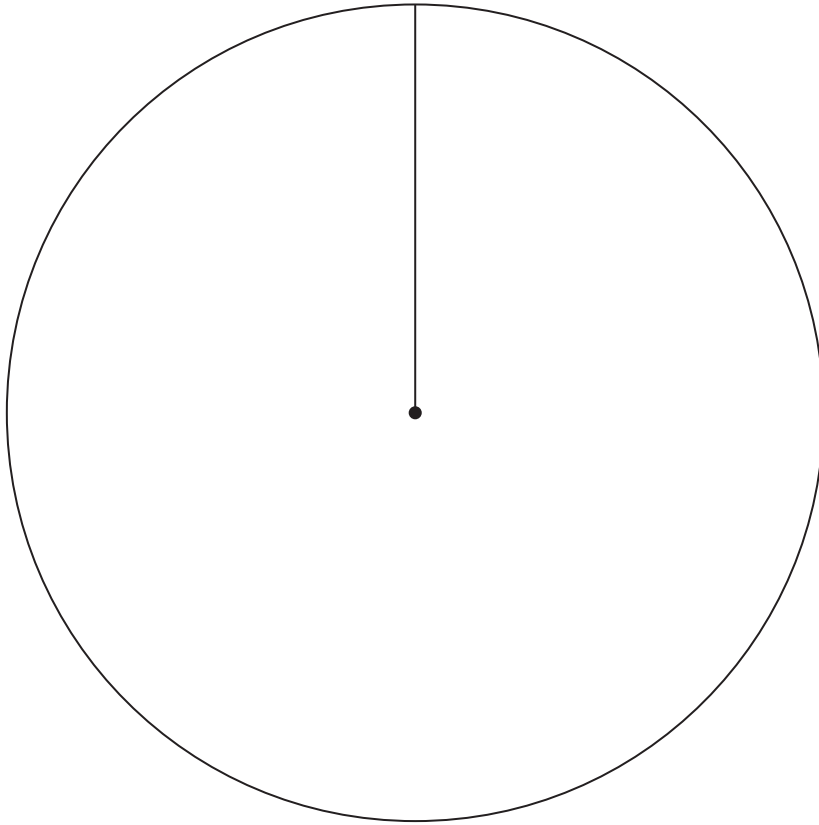
[2]

(c) What fraction of the day was spent working?
Give your answer in its simplest form.

(c) [1]

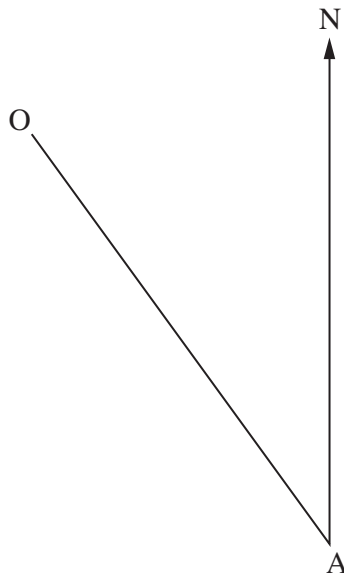
5

(d) Use the circle below to show the information in the pictogram as a pie chart.



[4]

14 The diagram shows the positions of a town, A, and an oasis, O.



- (a) (i) Measure the length on the diagram of the line AO.
Give your answer in metric units.
State the units of your answer.

(a)(i) [2]

- (ii) Measure the acute angle between the two lines on the diagram.

(ii) ° [1]

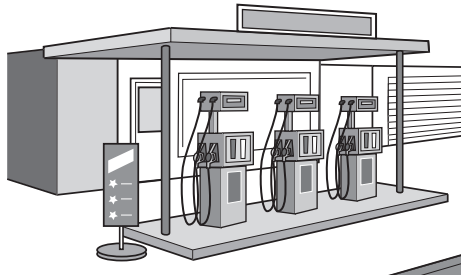
The diagram is drawn to a scale of 1 cm to 2 km.

- (b) Give the actual distance and bearing of the oasis from the town.

(b) km on a bearing of ° [2]

- (c) A well, W, is 9 km from the oasis, O, on a bearing of 255°.

Mark W on the diagram. [2]



A petrol station charged 115.9 pence per litre for fuel.

- (a) Greta put 40 litres of fuel into her car.

How much did Greta pay for this fuel?

(a) £ [2]

- (b) Gavin filled his car with fuel until the pump showed £50 to pay.
He used a coupon which entitled him to 5 pence off for every **full** litre of fuel bought.

How much did Gavin actually pay?
Show your working.

(b) £ [4]

16 Sarah was given a bag containing 50 sweets. Each day she eats 4 sweets.

(a) How many sweets does Sarah have left after 2 days?

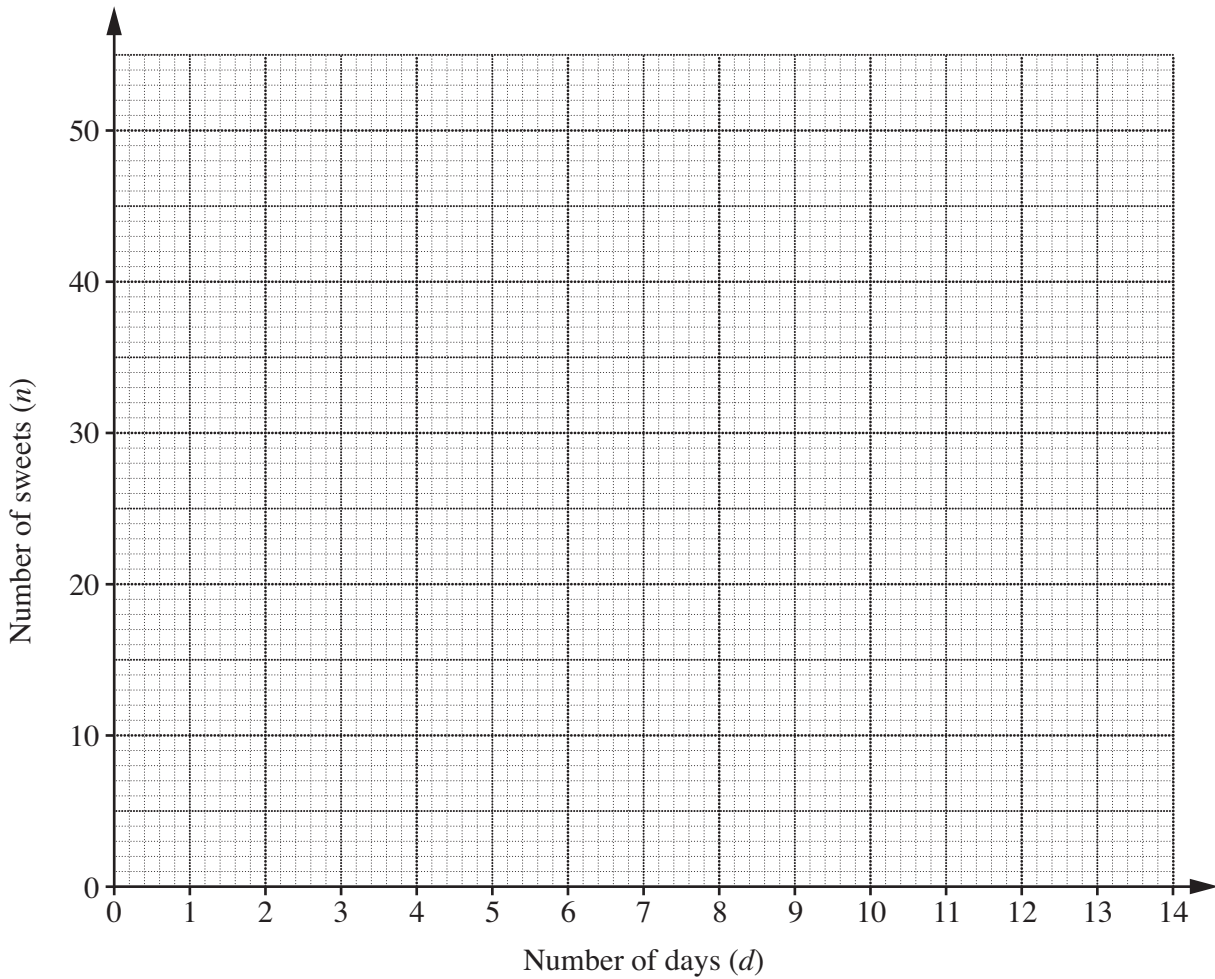
(a) [1]

(b) Write down an equation connecting

- n , the number of sweets left in the bag and
- d , the number of days since she was given the bag of sweets.

(b) [2]

(c) Draw the graph of n against d .



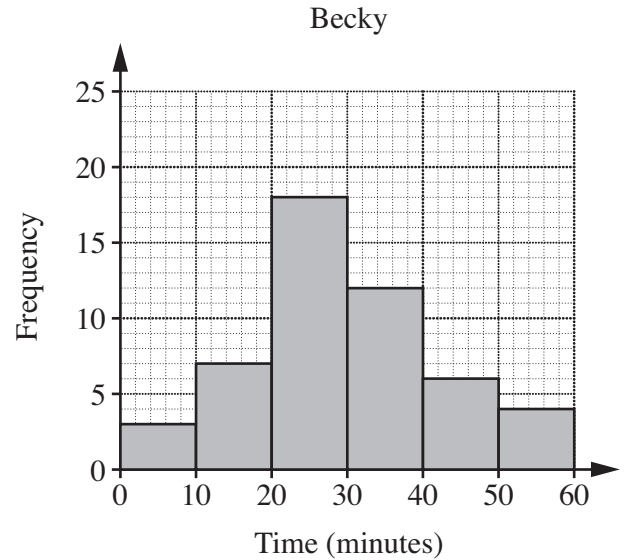
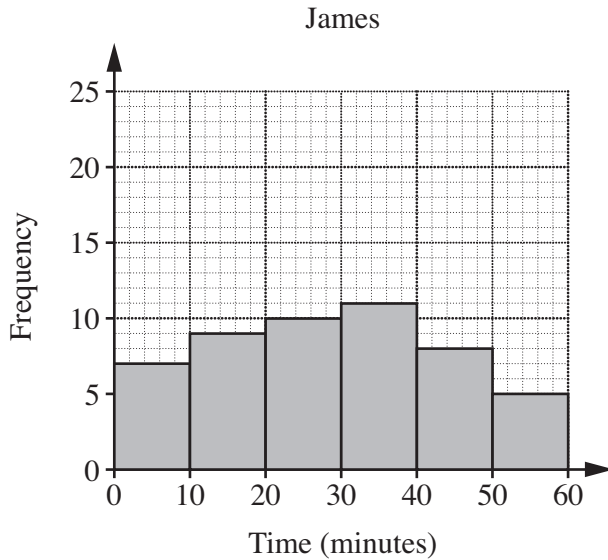
[2]

(d) Use your graph to find on what day the bag is empty.

(d) [1]

- 17 James and Becky each carried out a survey about the length of time it takes for the students at their school to get to school. They each took a sample of 50 students.

Their results are shown in these frequency diagrams.



- (a) State the modal class of Becky's times.

(a) minutes [1]

- (b) Make **two** comparisons between the two distributions.

1

2 [2]

- (c) To obtain his sample, James went round the playground at break and asked a selection of 50 students.

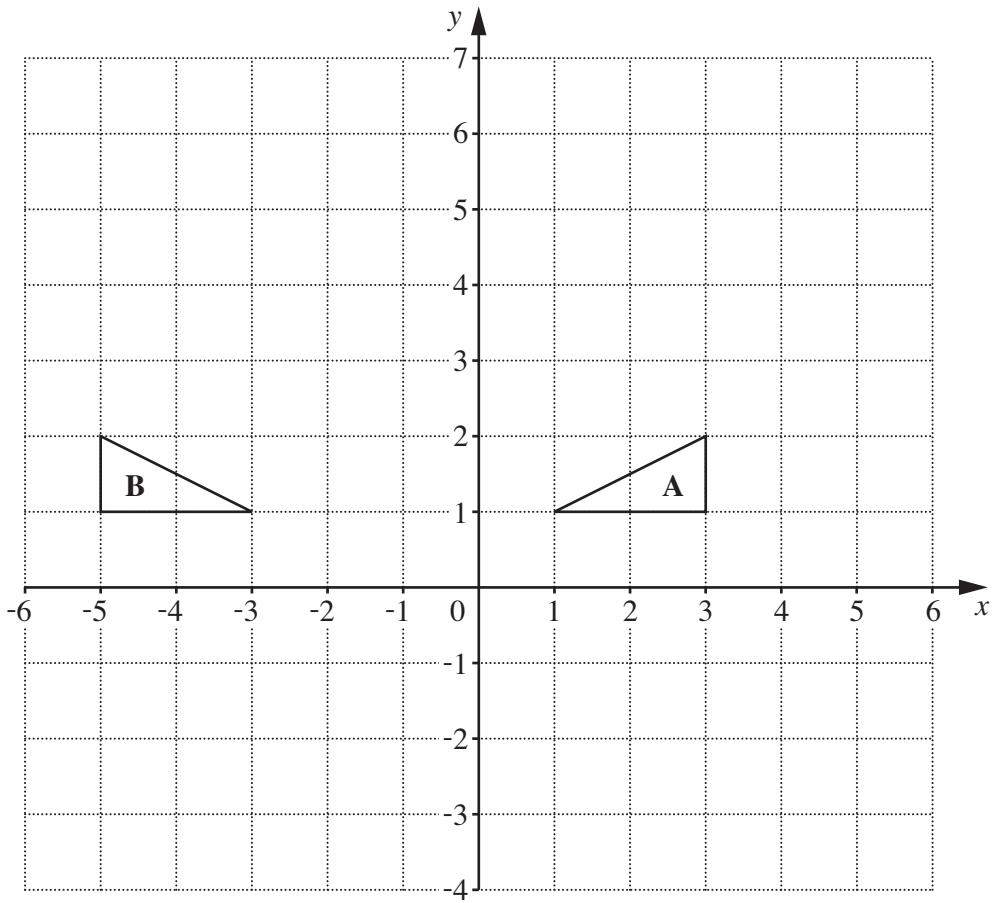
To obtain her sample, Becky stood outside the school gate before school and asked the first 50 students she saw arriving.

- (i) Give **one** reason why James' sample may not be representative.

..... [1]

- (ii) Give **one** reason why Becky's sample may not be representative.

..... [1]



(a) Describe fully the single transformation that maps triangle **A** onto triangle **B**.

..... [2]

(b) Draw an enlargement of triangle **A** with centre (4, 0) and scale factor 3.

[3]

19 (a) 56 can be expressed as the product of its prime factors as $2 \times 2 \times 2 \times 7$.

(i) Express 24 as the product of its prime factors.

(a)(i) [2]

(ii) Find the highest common factor (HCF) of 24 and 56.

(ii) [1]

(b) Write the following as an ordinary number.

$$2.8 \times 10^4$$

(b) [1]

TURN OVER FOR QUESTION 20

20 (a) Solve these equations.

(i) $2p - 6 = 14$

(a)(i) [2]

(ii) $\frac{q}{2} - 10 = -4$

(ii) [2]

(b) Rearrange this equation to make x the subject.

$$y = \frac{x + a}{5}$$

(b) [2]



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