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Monday 16 January 2012 – Morning

GCSE MATHEMATICS B (MEI)

B292A Paper 2 Section A (Foundation Tier)

B216670112

Candidates answer on the Question Paper.

OCR supplied materials:
None

Other materials required:
- Geometrical instruments
- Tracing paper (optional)

Duration: 1 hour

B292A

Candidate forename		Candidate surname	

Centre number						Candidate number				

INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Answer **all** the questions.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Show your working. Marks may be given for a correct method even if the answer is incorrect.
- 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).
- Do **not** write in the bar codes.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets **[ ]** at the end of each question or part question.
- The total number of marks for this Section is **50**.
- This document consists of **12** pages. Any blank pages are indicated.

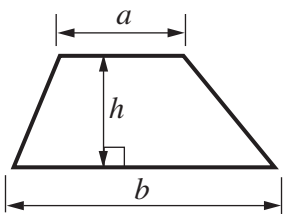
WARNING

No calculator can be used for Section A of this paper

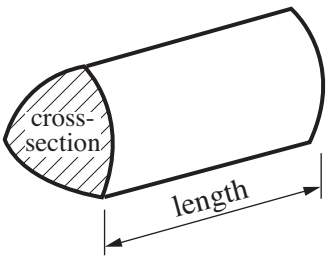
OCR is an exempt Charity

Formulae Sheet: Foundation Tier

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



Volume of prism = (area of cross-section) × length



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1 **(a)** Write these percentages as fractions.

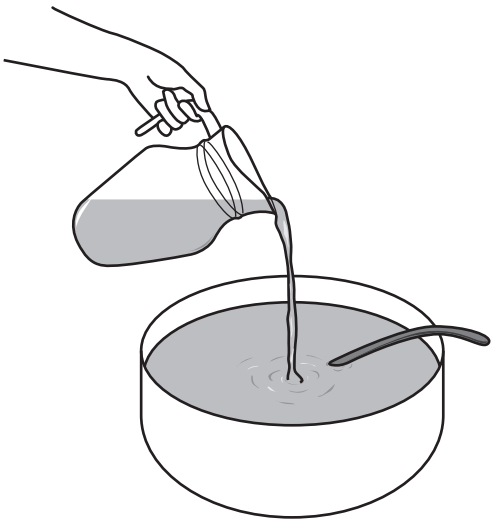
(i) 25%

(a)(i) ..... **[1]**

(ii) 10%

(ii) ..... **[1]**

(b)



Rohan is making a fruit drink.
Here are the ingredients.

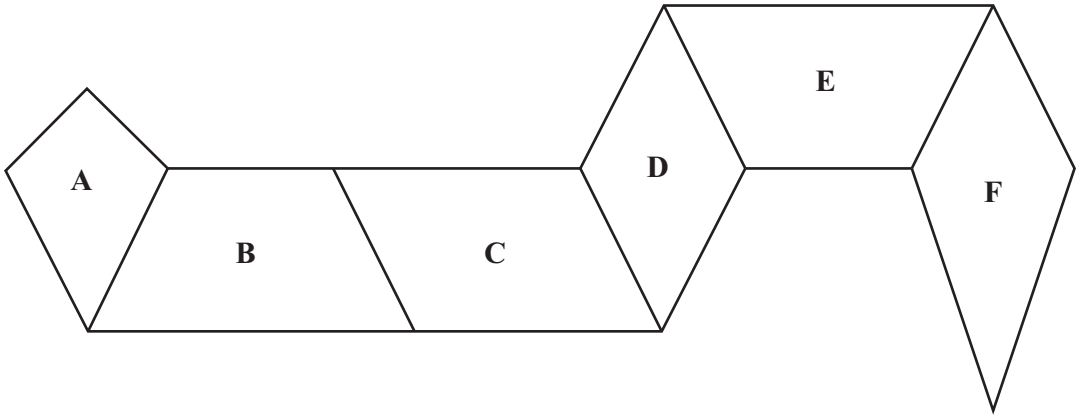
- a jug that is half full of orange juice
- a jug that is 25% full of apple juice
- a jug that is 10% full of pineapple juice

He uses a 500 ml measuring jug.

Calculate the total volume of drink that Rohan makes.

(b) ..... ml **[3]**

2 **(a)**



Fill in each gap in the following sentences.
Use letters from the diagram.

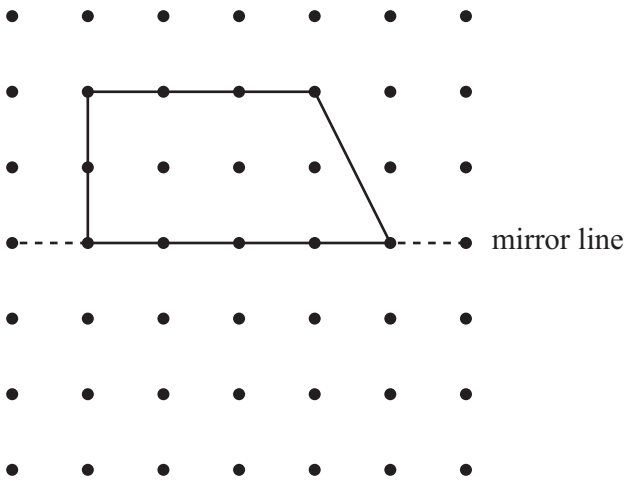
(i) Shapes ..... and ..... are congruent. **[1]**

(ii) Shape ..... is a Rhombus. **[1]**

(iii) Shape ..... does **not** have a line of symmetry. **[1]**

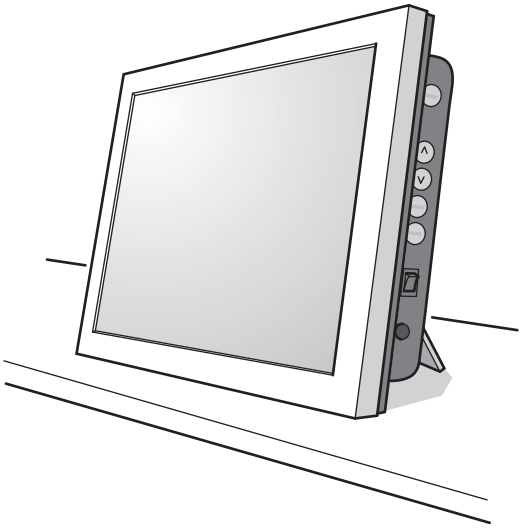
(iv) The mathematical name for shape F is a ..... **[1]**

(b) Draw a reflection of the trapezium below in the mirror line.

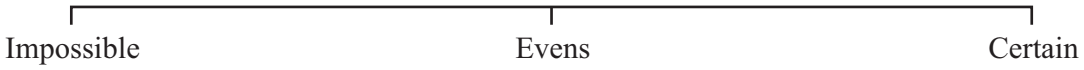


[2]

3



Yuri has a digital photo frame on which he has stored photos of cars, photos of trucks and no other photos.
He has a lot of photos of cars and a few photos of trucks.
Yuri switches on his photo frame and one of these photos is displayed at random.



Draw an arrow on the probability line to show the probability of each of these outcomes.

(a) The photo is of a truck.
Label this arrow A. **[1]**

(b) The photo is of a car.
Label this arrow B. **[1]**

(c) The photo is of a vehicle.
Label this arrow C. **[1]**

(d) The photo is of a bike.
Label this arrow D. **[1]**

4 **(a)** Put the correct number in the box to make these fractions equal.

$$\frac{3}{4} = \frac{\square}{20}$$

[1]

(b) Write these fractions in order of size, smallest first.
Show how you decide.

$$\frac{3}{4} \qquad \frac{7}{10} \qquad \frac{13}{20}$$

(b) ..... , ... , ...**[2]**
smallest

(c) Work out $\frac{3}{4} - \frac{13}{20}$.

Give your answer as a fraction in its simplest form.

(c) ..... **[2]**

5 **(a)** Work these out.

(i) $36 - 12 \times 2$

(a)(i) ..... **[1]**

(ii) $\left(\frac{6}{2}\right)^2$

(ii) ..... **[1]**

(iii) $\frac{2 \times 5^2 - 90}{4}$

(iii) ..... **[2]**

(b) I multiply x by 2.
Then I add 3 to the result.

Write an expression, in x, for my answer.

(b) ..... **[2]**

6 **(a)** Write down the number that has a cube root of 3.

(a) ..... **[1]**

(b) Write down the negative number which can be squared to give 16.

(b) ..... **[1]**

(c) Write down the factor of 28 which is both odd and prime.

(c) ..... **[1]**

(d) Write these as a single power of 10.

(i) $10^6 \times 10^2$

(d)(i) ..... **[1]**

(ii) $10^7 \div 10^4$

(ii) ..... **[1]**

7 You are given that $4.32 \times 1.65 = 7.128$.

Use this result to find the answers to these calculations.

(a) 43.2×165

(a) ..... **[1]**

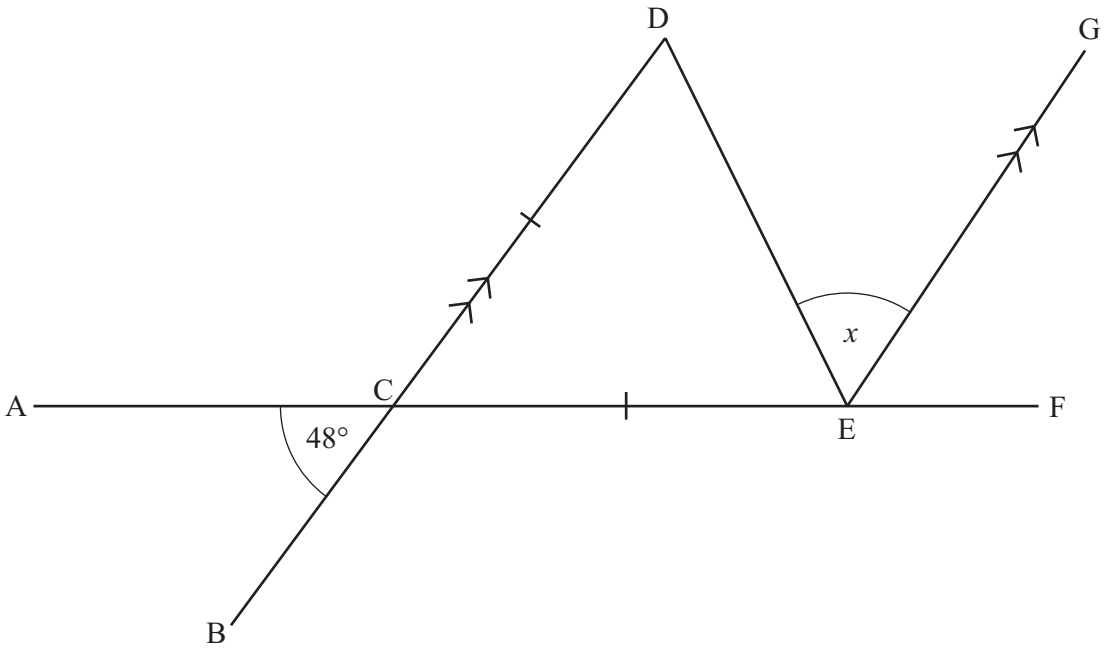
(b) $7128 \div 0.432$

(b) ..... **[1]**

8 **(a)** Work out the exterior angle of a regular octagon.

(a) ..... ° **[2]**

(b)



Not to scale

In the diagram BCD and ACEF are straight lines.
CD and CE are equal.
BD is parallel to EG.

Calculate angle x.
On the diagram, show any other angles that you find in working out your answer.

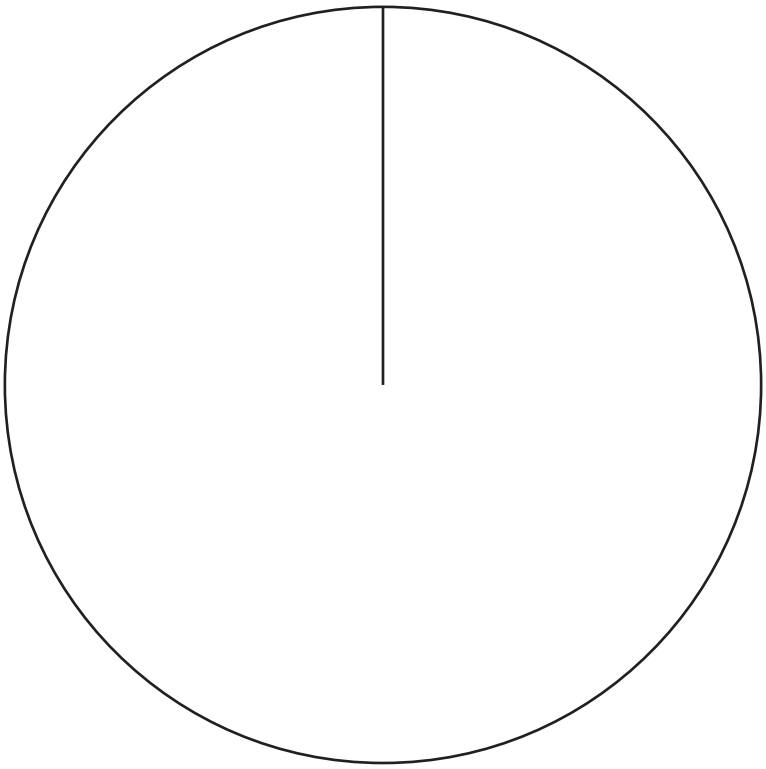
(b) ..... ° **[3]**

9 Wasim asked the pupils in his year group, "What is your favourite leisure activity?"

These are the results.

Leisure activity	Frequency
Sport & exercise	43
Watching TV	62
Using a computer	51
Reading	16
Other	8

(a) Draw a pie chart to illustrate this information.



[4]

(b) One of these pupils is chosen at random.

What is the probability that this pupil preferred watching TV or using a computer?

(b) ..... **[2]**

10 **(a)** Expand the following.

(i) $x(5 - x)$

(a)(i) ..... **[1]**

(ii) $(x + 3)(x - 2)$

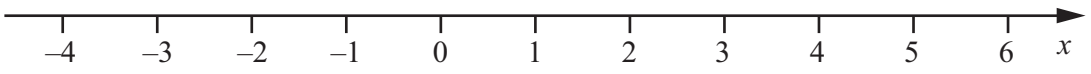
(ii) ..... **[2]**

(b) **(i)** Solve this inequality.

$$6x < 4x + 9$$

(b)(i) ..... **[2]**

(ii) Represent your answer to part **(b)(i)** on this number line.



[1]

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