

Please write clearly in block capitals.

Centre number

Candidate number

Surname _____

Forename(s) _____

Candidate signature _____

I declare this is my own work.

Functional Skills Level 2 MATHEMATICS

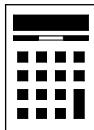
Paper 2 Calculator

Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:

- a calculator
- mathematical instruments.



Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.
- State the units of your answer where appropriate.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 60.
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.
- If your calculator does not have a π button, take the value of π to be 3.142

Advice

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

For Examiner's Use	
Question	Mark
1–6	
7	
8	
9	
10	
TOTAL	



N 0 V 2 1 8 3 6 2 2 0 1

Section AAnswer **all** questions in the spaces provided.

- 1** The probability of an event happening is $\frac{3}{5}$

Circle the probability of the event **not** happening.**[1 mark]**

1

 $\frac{2}{5}$ $\frac{3}{5}$

0

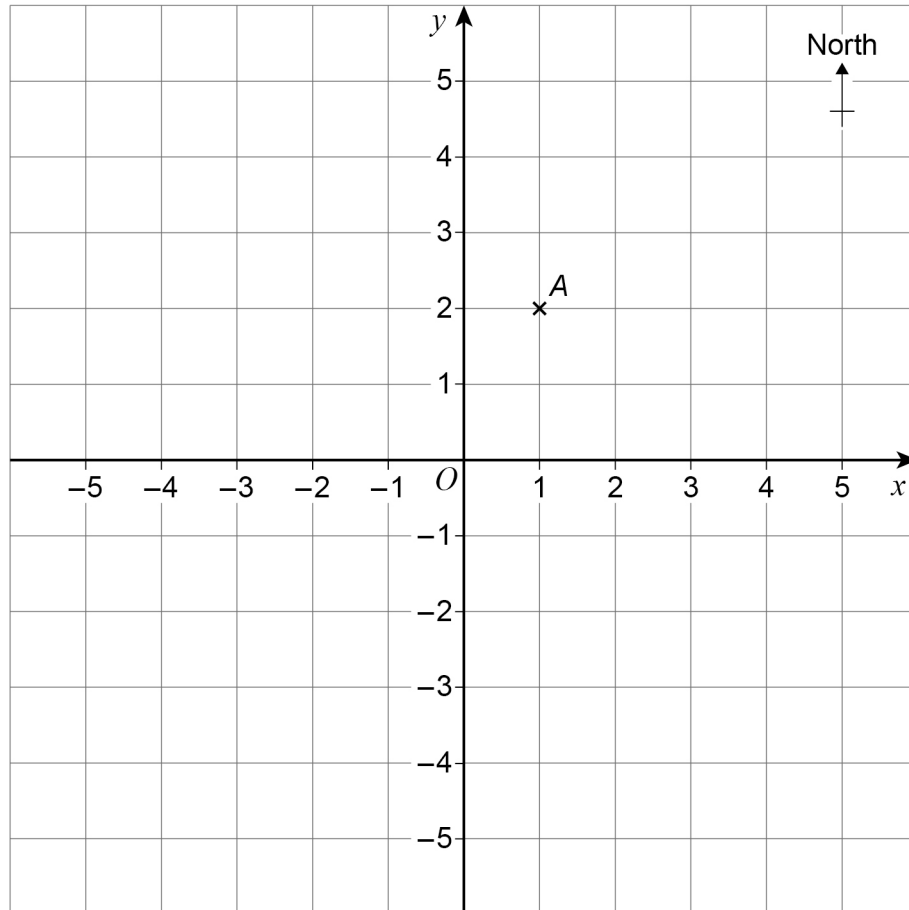
- 2** $x = 5$ and $y = -3.2$

Work out the value of $x + y^2$ **[2 marks]**

Answer _____



3



A is the point $(1, 2)$

B is the point

3 squares West of A

and

5 squares South of A .

Work out the coordinates of B .

[2 marks]

Answer (_____ , _____)

Turn over ►



4 In the boxes, write the number that is

3 more than -8

4 less than -2

halfway between -7 and 5

[3 marks]

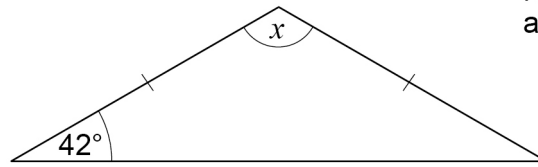
5 Write the ratio $144 : 90$ in its simplest form.

[2 marks]

Answer _____ : _____



6 Here is an isosceles triangle.



Not drawn
accurately

Work out the size of angle x .

[2 marks]

Answer _____^o

12

Turn over for Section B

Turn over ►



Section B

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

7 Energy

Jim's house has gas central heating.

7 (a) The charges for the gas Jim uses are shown in the table.

Cost per unit of gas (kWh)	2.92 p
Standing charge per day	39.6 p

In November, Jim uses 1976 kWh of gas.

Use **approximations** to estimate Jim's November gas payment.

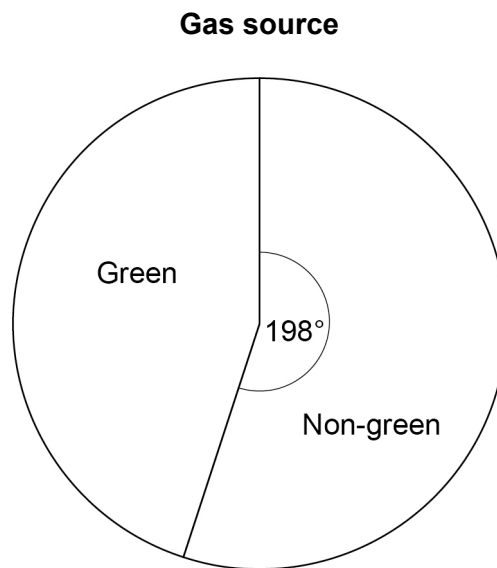
Give your answer in pounds.

[5 marks]

Answer £ _____



- 7 (b) Jim's current gas company produces 43% of their gas from green sources. He sees this pie chart for another gas company, MixGas.



Jim wants to use the company with a greater proportion of gas from green sources.

Should Jim change to MixGas?

You **must** show your working.

[3 marks]

Question 7 continues on the next page

Turn over ►



- 7 (c)** Jim is thinking of buying solar panels.
The price of these panels has decreased by 27% since 2016
Jim would need to pay £4803.40 for the panels now.

How much would the panels have cost in 2016?

[3 marks]

Answer £ _____

11



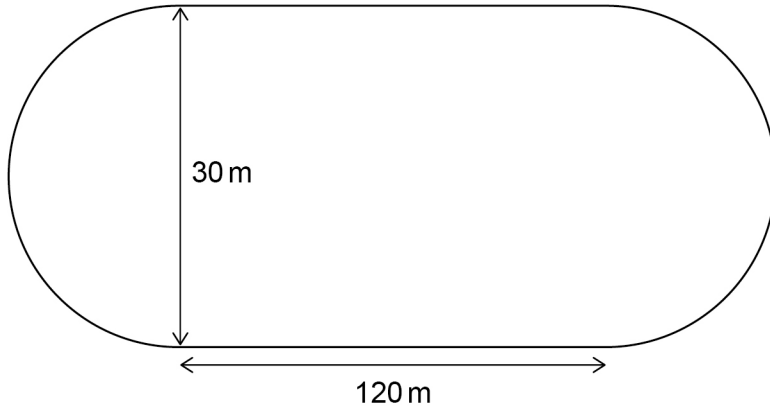
8 Dog

Ben has a dog called Pluto.

8 (a) Ben takes Pluto for a walk.

They walk **4 laps** of a sports track.

The sports track is the shape of two semi-circles joined by two straight sections.



Not drawn
accurately

Ben has a target to walk 5000 m each day.

What percentage of his daily target has Ben completed on this walk?

[5 marks]

Answer _____ %

Question 8 continues on the next page

Turn over ►



8 (b) Pluto needs to eat 420 grams of food each day, in the ratio
wet food : dry food = 2 : 5

Ben buys a 12 kilogram bag of **dry** food.

How many days of **dry** food does the bag provide?

[4 marks]

Answer _____ days

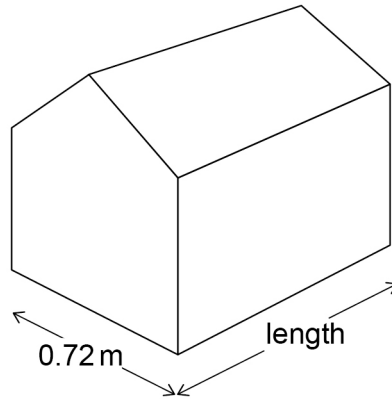


8 (c) In his garden, Ben has a rectangular fenced area for Pluto.

The fenced area measures 2.4 m by 2.25 m

Ben builds a kennel for Pluto which covers $\frac{1}{6}$ of the fenced area.

Here is a sketch of the kennel.



The base of the kennel is a rectangle.

Work out the length of the kennel.

[4 marks]

Answer _____ m

Turn over for the next question



9 Fundraising

A charity organises an annual sponsored swim.

9 (a) Ahmed swam 50 lengths of a pool that is 25 metres long.

The swim took him 38 minutes.

Ahmed says,

“My average speed was more than 0.7 metres per **second**.”

Is Ahmed correct?

You **must** show your working.

[4 marks]



9 (b) Ahmed collected £35 for his swim and gave it to the charity.

$\frac{6}{7}$ of this money was donated by taxpayers.

Using Gift Aid, the charity claimed an extra 25p for every £1 donated by a taxpayer.

How much money did the charity receive, **including** Gift Aid, from Ahmed's swim?

[3 marks]

Answer £ _____

Question 9 continues on the next page

Turn over ►



- 9 (c)** This year, 20 people completed the sponsored swim.
The table shows information about the sponsor money collected.

Money (£ x)	Frequency	Mid-point	
$0 < x \leq 10$	7		
$10 < x \leq 20$	4		
$20 < x \leq 30$	6		
$30 < x \leq 40$	1		
$40 < x \leq 50$	2		
	Total = 20		

Last year, the mean amount collected per swimmer was £14.85

The charity organiser says,

“This year’s mean amount is **more than** £3 higher than last year’s.”

Show your working to support this statement.

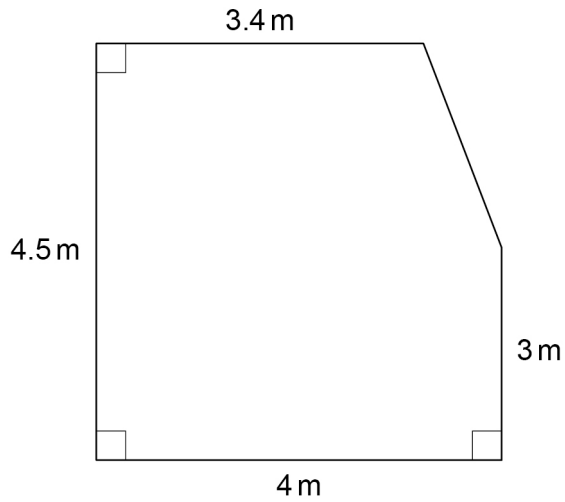
[5 marks]



10 Conservatory

Molly is building a conservatory.

10 (a) Here is a plan view of the conservatory.



Not drawn
accurately

The conservatory floor will be made of concrete.

The concrete floor will be 0.1 m deep.

What volume of concrete will Molly need for the floor?

State the units of your answer.

[6 marks]

Answer _____

Question 10 continues on the next page

Turn over ►



- 10 (b)** Molly has a scale drawing of the side elevation of the conservatory.
The scale of the drawing is 3 : 50
The height of the conservatory on the scale drawing is 23.4 centimetres.
Is the actual height of the conservatory **less than** 4 metres?
You **must** show your working.

[3 marks]



- 10 (c)** Molly wants to build a brick wall as part of the conservatory.
It would take Molly 12 hours to build the wall by herself.
Molly pays 2 builders to work with her to build the wall.
Molly pays each builder £14.73 per hour.

How much will Molly pay each builder for their work?
Assume that Molly and the builders work at the same rate.

[3 marks]

Answer £ _____

12

END OF QUESTIONS



There are no questions printed on this page

*Do not write
outside the
box*

**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**



