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Please write clearly i	n 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.

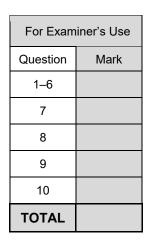
#### Information

- 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  $\pi$  button, take the value of  $\pi$  to be 3.142

#### Advice

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





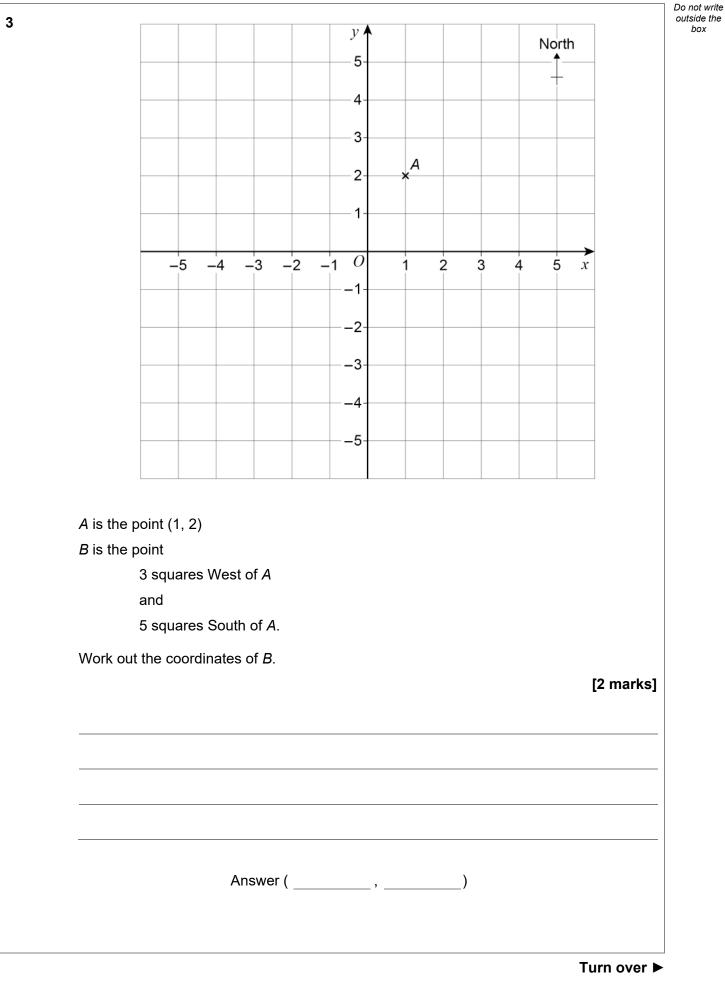
### 8362/2 QAN 603/4258/4

IB/H/Nov21/E8

		Section A			
	Answer <b>a</b>	all questions in the	spaces provided.		
1	The probability of an ever	It happening is $\frac{3}{5}$			
	Circle the probability of the	e event <b>not</b> happer	ning.		[1 mark]
	1	$\frac{2}{5}$	$\frac{3}{5}$	0	
2	x = 5 and $y = -3.2$				
	Work out the value of $x + \frac{1}{2}$	$y^2$			[2 marks]
	Answer				



Do not write outside the box

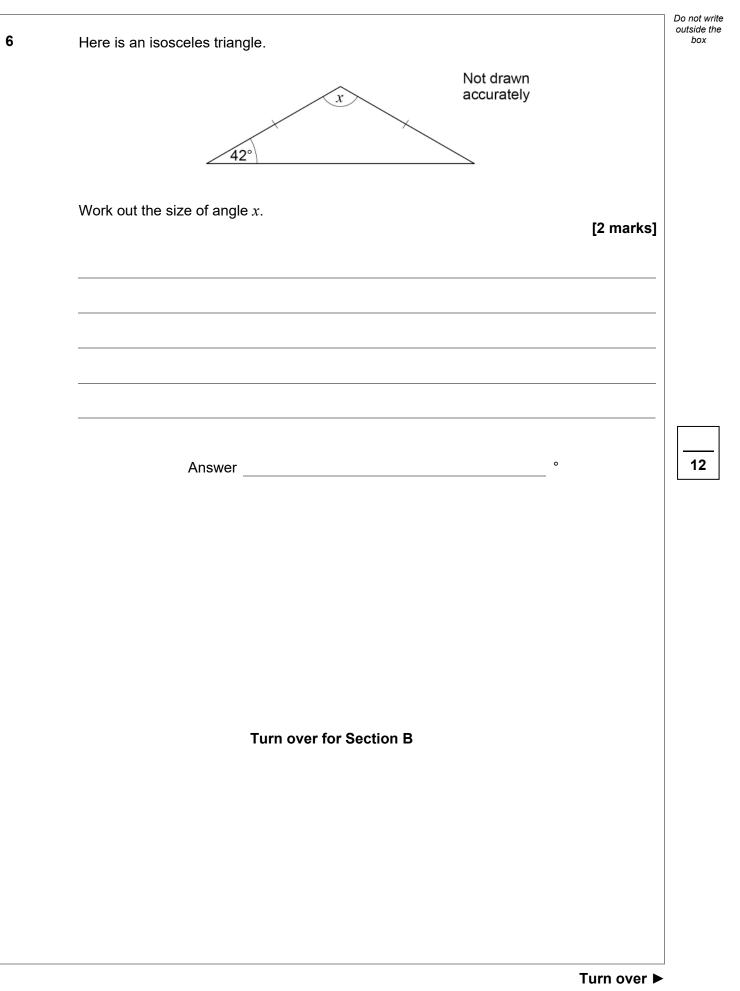




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4	In the boxes, write the number that is	Do not v outside box	the
	3 more than –8		
	4 less than –2		
	halfway between –7 and 5	[3 marks]	
5	Write the ratio 144 : 90 in its simplest form.	[2 marks]	
	Answer:		

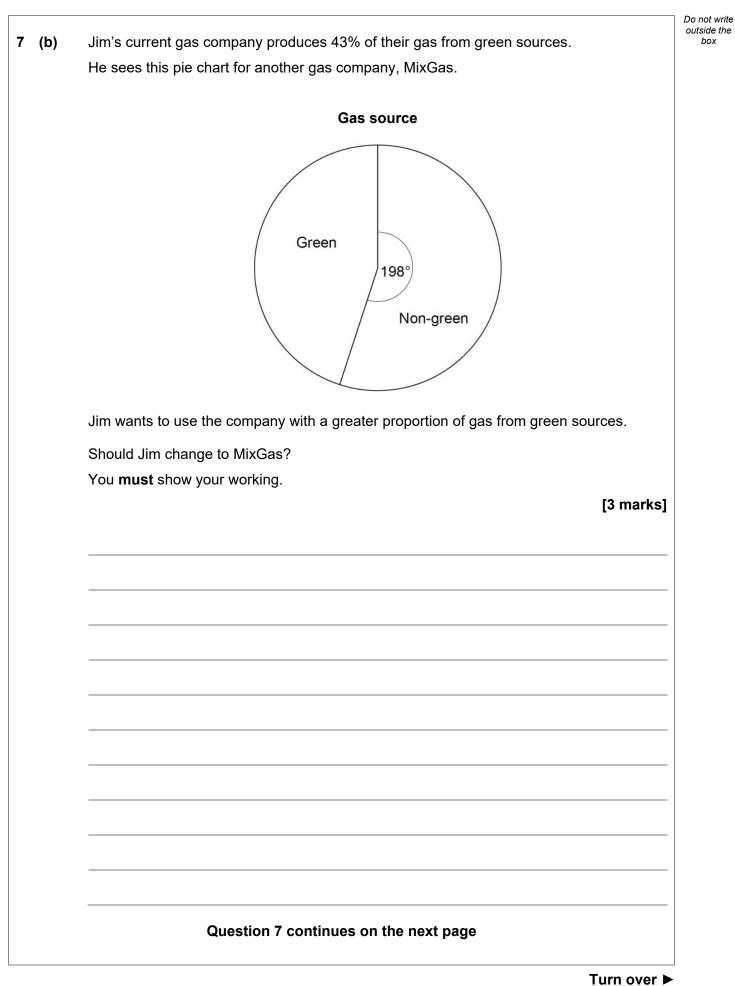






	Section B	
	Answer <b>all</b> questions in the spaces provided.	
	Energy	
	Jim's house has gas central heating.	
(a)	The charges for the gas Jim uses are shown in the table.	
	Cost per unit of gas (kWh) 2.92 p	
	Standing charge per day 39.6 p	
	In November, Jim uses 1976 kWh of gas.	
	Use <b>approximations</b> to estimate Jim's November gas payment.	
	Give your answer in pounds.	[5 marks]
	Answer £	







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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.	Do not write outside the box
		How much would the panels have cost in 2016?	
		[3 marks]	
		Answer £	11



		_	Do not write outside the
8		Dog	box
		Ben has a dog called Pluto.	
8	(a)	Ben takes Pluto for a walk.	
		They walk <b>4 laps</b> of a sports track.	
		The sports track is the shape of two semi-circles joined by two straight sections.	
		30 m Not drawn accurately	
		120 m	
		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 ►	]



			Do not
8 (b)	Pluto needs to eat 420 grams of food each day, in the ratio		outsic bo
	wet food : dry food = $2:5$		
	Ben buys a 12 kilogram bag of <b>dry</b> food.		
	How many days of <b>dry</b> food does the bag provide?		
		[4 marks]	
	Answer days		



10

			Do not write outside the
8	(c)	In his garden, Ben has a rectangular fenced area for Pluto.	box
		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.	
		0.72 m length	
		The base of the kennel is a rectangle.	
		Work out the length of the kennel.	
		[4 marks]	
		Answer m	13
		Turn over for the next question	
			]



9		Fundraising		Do not write outside the box
5		A charity organises an annual sponsored swim.		
•	(a)			
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 <b>second</b> ."		
		Is Ahmed correct?		
		You <b>must</b> show your working.		
			[4 marks]	
				1



		-
9 (b)	Ahmed collected £35 for his swim and gave it to the charity.	Do not w outside t box
	$\frac{6}{7}$ 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, <b>including</b> Gift Aid, from Ahmed's swim? [3 marks]	
	Answer £	
	Answer £	
	Question 9 continues on the next page	



**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 < <i>x</i> ≤ 10	7		
10 < <i>x</i> ≤ 20	4		
20 <i>&lt; x</i> ≤ 30	6		
30 <i>&lt; x</i> ≤ 40	1		
40 <i>&lt; x</i> ≤ 50	2		
	Total = 20		

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

The charity organiser says,

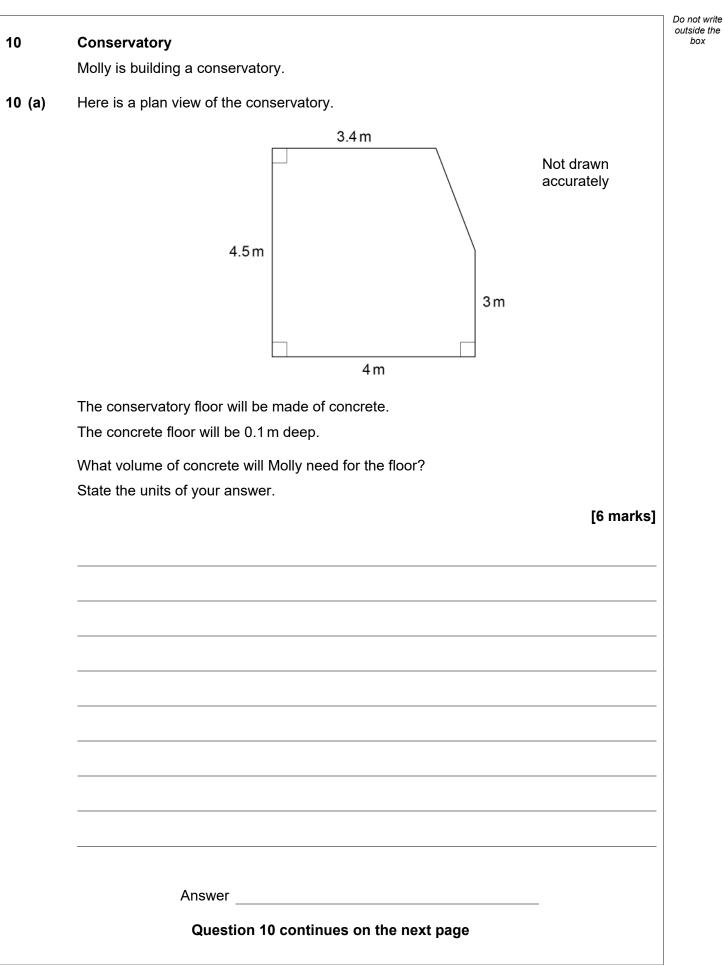
"This year's mean amount is more than £3 higher than last year's."

Show your working to support this statement.

[5 marks]



12



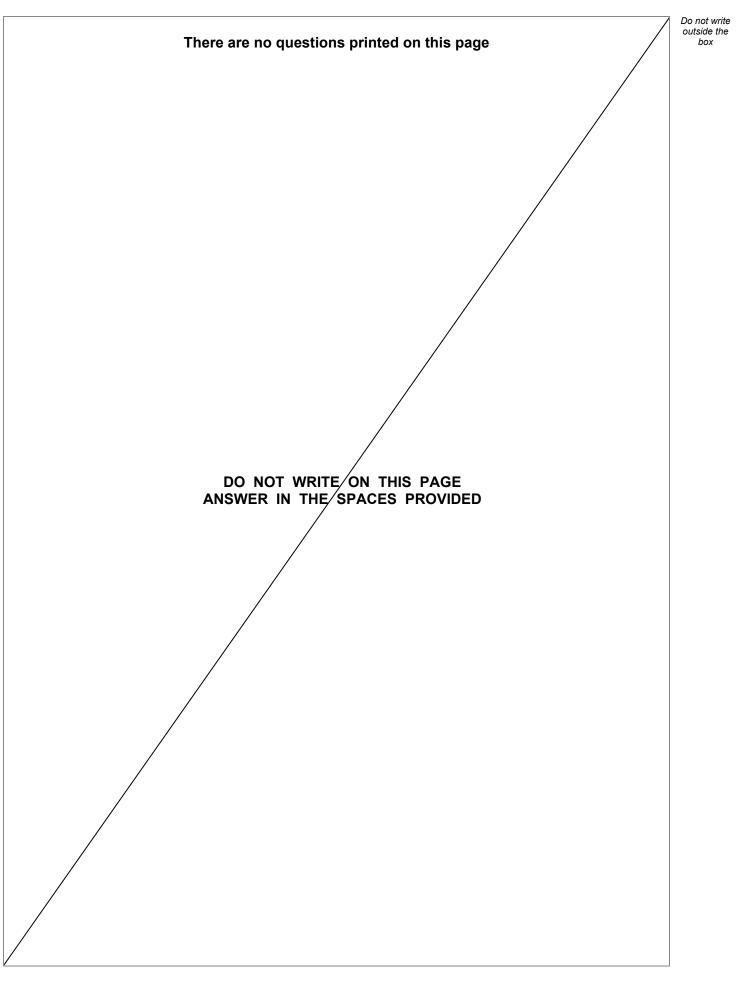


			Do not write
10 (b)	Molly has a scale drawing of the side elevation of the conservatory.		box
	The scale of the drawing is 3 : 50		
	The height of the conservatory on the scale drawing is 23.4 centimetres.		
	Is the actual height of the conservatory less than 4 metres?		
	You <b>must</b> show your working.		
		[3 marks]	



		Do not write
10 (c)	Molly wants to build a brick wall as part of the conservatory.	outside the box
	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	







Question number	Additional page, if required. Write the question numbers in the left-hand margin.



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