

Please write clearly in	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

Thursday 3 November 2022 Afternoon 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.

Question Mark 1-8 9 10 11 12 12

TOTAL

For Examiner's Use

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.



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•	=	۱.				_

	Α	nswer all ques	stions in the sp	paces provided.		
1	Circle the integer.]	1 mark]
	0.5		1 8	7	-10.2	
2	Write 9507211 Answer					1 mark]
	Allswei					
3	Work out 3 years Give your answer				[2	marks]
		Answe	er	_:		



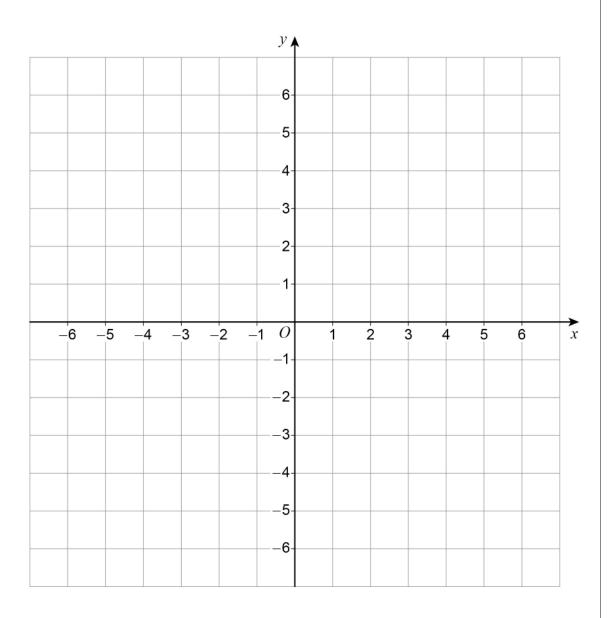
On the grid, plot and label the points X, Y and Z. 4

[2 marks]

$$X = (3, 5)$$

$$Y = (5, -3)$$

$$X = (3, 5)$$
 $Y = (5, -3)$ $Z = (-3, -5)$

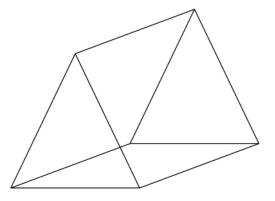


Turn over for the next question



5 Write the mathematical name of this solid shape.

[1 mark]



Answer _____

6	Calculate	$2\frac{1}{5}+1\frac{3}{4}$
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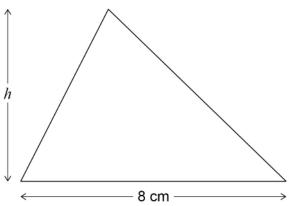
[1 mark]

Answer _____

7 A triangle has an area of 20 cm²

The base of the triangle is 8 cm

Not drawn accurately



Work out the perpendicular height, $\it h$, of the triangle.

[2 marks]

Answer _____ cm

8 Calculate 2(7 + 3k) when k = -1.8

[2 marks]

Answer ____

12



Section B

Answer all questions in the spaces provided.

9 Lorry driving

Asha is a lorry driver.

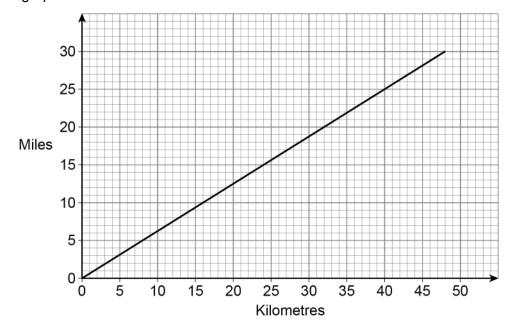
9 (a) Asha drives from Southampton to Leeds.

The journey

is 380 kilometres

takes 5 hours and 30 minutes.

The graph can be used to convert between miles and kilometres.



Asha works out that his average speed is over 40 mph

Is he correct?

You **must** show your working.

[4	IIIai	vəl



9	(b)	The amount Asha is paid each week is calculated using the formula	outside box
	(-)	P = 0.73(0.14d + 65n)	
		where	
		P = pay in pounds	
		d= distance driven in kilometres that week	
		n = number of days worked that week	
		Last week Asha worked for 5 days.	
		His pay for last week's work was £605.17	
		How many kilometres did Asha drive last week?	
		[4 marks]	
			8
		Answer kilometres	

Turn over for the next question



4.0		
10	Fundraisii	าต
10	ı ununalən	ıч

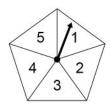
Carol is fundraising for a sports club.

10 (a) Carol designs a game.

The game uses

a bag containing a red ball, a blue ball and a yellow ball a fair, 5-sided spinner.





The player

picks a ball at random from the bag

and

spins the spinner.

The player wins if they pick the **red** ball and the spinner lands on an **even** number.

Carol says,

"The chance of winning is more than 10%"

Is she correct?

You must show your working.

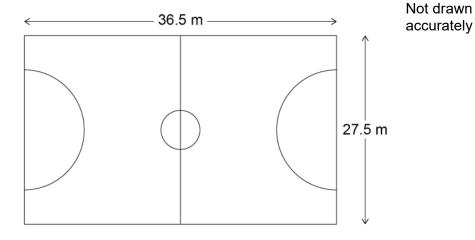
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		—



[4 marks]

10 (b) The club wants to use some of the money to paint the lines on a mini football pitch. The lines to be painted are

- the four sides of a rectangle measuring 27.5 m by 36.5 m
- a halfway line measuring 27.5 m
- a centre circle with a radius of 1.5 m
- two semicircles, each with a radius of 8 m



It costs £3.25 per metre to paint the lines.

Answer £

In total, how much will it cost to paint all the lines?	[6 marks		



			1
10 (c)	After painting the lines the club has £8225		Do n outs
	They invest $\frac{2}{7}$ of this money in a bank account for 4 years.		
	The account pays compound interest at 3% per year.		
	Is the investment worth more than £2700 at the end of the 4 years?		
	You must show your working.	[4 marks]	
		[4 marks]	
			<u> </u>



11	Ice cream
	Suzi has an ice cream van.
11 (a)	Suzi buys tubs of ice cream and sells scoops of ice cream. Each scoop is in the shape of a sphere with radius 2.8 cm $ \text{volume of sphere } = \frac{4}{3}\pi r^3 $ $ r = \text{radius of sphere} $
	Suzi buys 5-litre tubs. 1 litre = 1000 cm^3
	Suzi wants to buy enough tubs to sell at least 200 scoops.
	Work out how many tubs Suzi should buy.
	You must show your working. [5 marks]
	Answer
	Question 11 continues on the next page



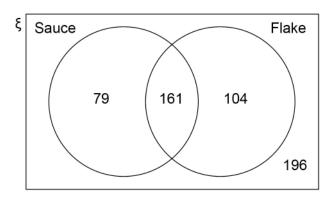
	O 450/ dia		Do no
(b)	Suzi uses a 15% discount voucher when she buys the tubs of ice cream.		b
	She pays £76.50 after the discount.		
	Suzi says,		
	"I save less than £14 by using the discount voucher."		
	Show working to support this statement.		
		[3 marks]	



11 (c) Suzi sells two ice cream toppings, sauce and flake.

She hopes that the probability that a customer, picked at random, buys **at least one** topping will be more than $\frac{7}{10}$

The Venn diagram shows what toppings the customers buy over one weekend.



Over this weekend, does Suzi achieve the probability she hopes to get? You **must** show your working.

[3 marks]

11

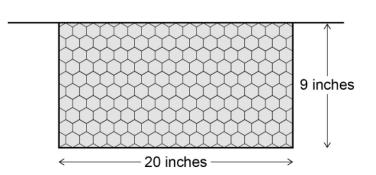
Turn over for the next question



Mary keeps bees and sells the honey they produce.

12 (a) The bees live in a beehive.

Mary's beehive holds rectangular frames full of honeycomb.



Not drawn accurately

Each frame measures 9 inches by 20 inches.

The beehive holds 8 frames.

Mary cuts the honeycomb into rectangular pieces measuring 11 cm by 7.5 cm

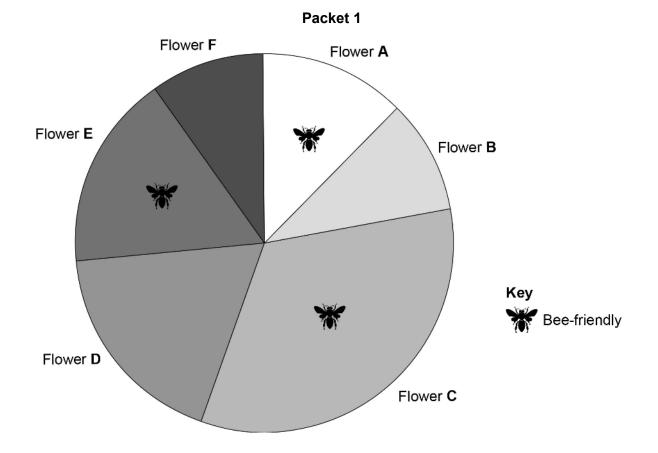
Work out the maximum number of pieces that Mary can get from her beehive.

Use 1 inch = 2.5 cm

		[5 marks]
Answer		



Mary wants to grow some bee-friendly flowers.She finds information about the different flowers produced from two packets of seeds.



Two thirds of the seeds in **Packet 2** produce bee-friendly flowers.

Mary wants to buy the packet producing the greater proportion of bee-friendly flowers.

Which packet should she buy?

You **must** show your working.

[4 marks]





Do not write outside the box

12 (c) Here are the instructions for planting flower seeds.

Use 4 grams of seed per square metre of garden.

Mix the seeds with sand in the ratio

mass of seed : mass of sand = 2:5

Mary measures her neighbours' gardens to work out the average-sized garden.

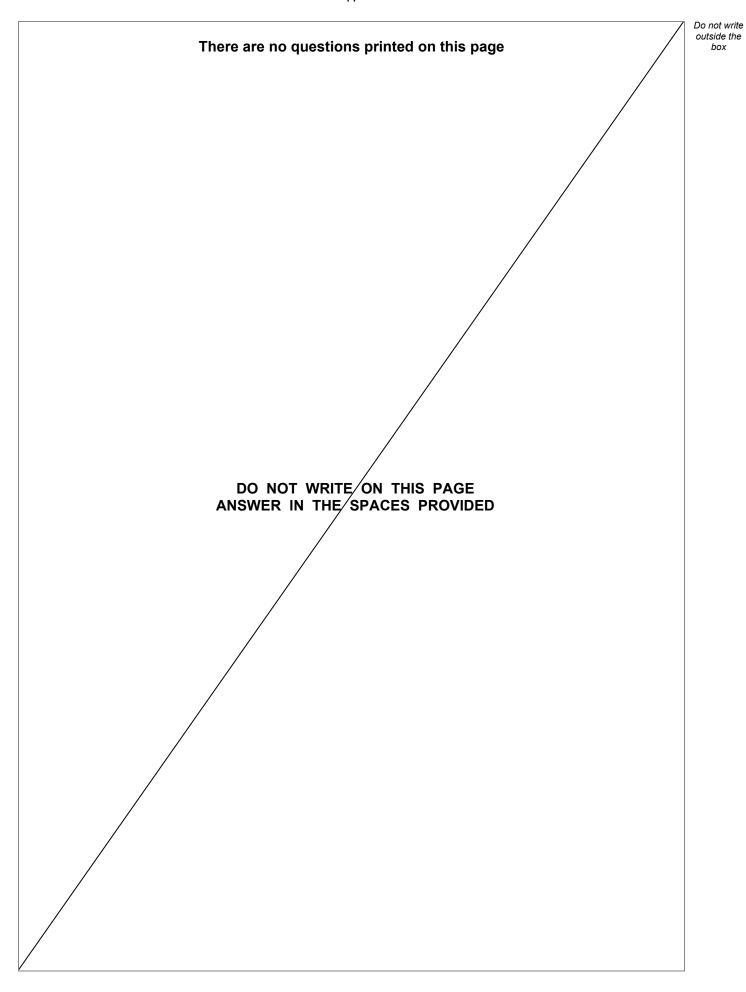
Garden (m²)	Frequency	Midpoint	
0 < area ≤ 10	2		
10 < area ≤ 20	8		
20 < area ≤ 30	12		
30 < area ≤ 40	3		

Estimate the total mass of seed and sand mix needed to cover an average-si	zed garden. [6 marks]
Answer gra	ms

END OF QUESTIONS

15







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



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



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