



Surname _____

Other Names _____

Centre Number _____

Candidate Number _____

Candidate Signature _____

I declare this is my own work.

Functional Skills Level 2

MATHEMATICS

Paper 2 Calculator

8362/2

Time allowed: 1 hour 30 minutes

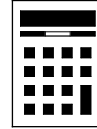
At the top of the page, write your surname and other names, your centre number, your candidate number and add your signature.

[Turn over]



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 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.

DO NOT TURN OVER UNTIL TOLD TO DO SO



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SECTION A

Answer ALL questions in the spaces provided.

1 Here are four numbers.

11 11 13 17

Work out the median.

Circle your answer. [1 mark]

6 11 12 13

2 Write these numbers in order, starting with the SMALLEST. [2 marks]

-16 4 -2 -20 7 -1

Answer

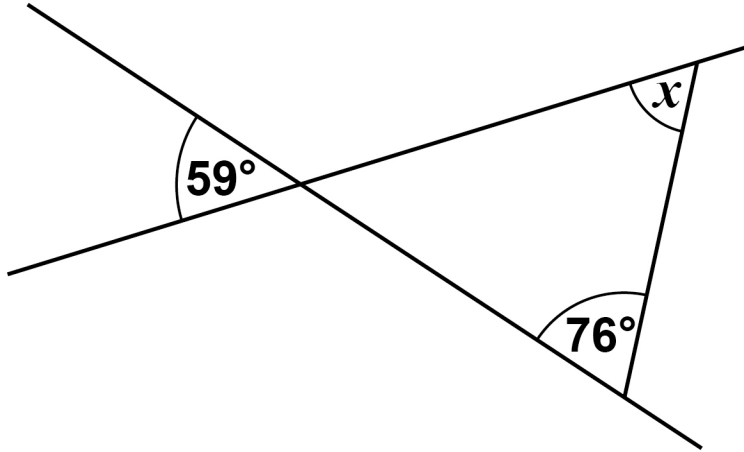
_____ , _____ , _____ , _____ , _____ , _____

[Turn over]



3 Here is a diagram made of three straight lines.

The diagram is not drawn accurately.



Work out the size of angle x . [3 marks]



$x =$ _____ °

- 4 **Work out the percentage increase from 250 to 330**
[3 marks]

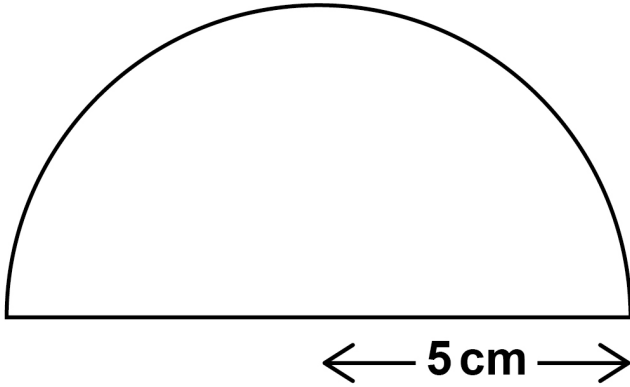
Answer _____ %

[Turn over]



5 The radius of a semicircle is 5 cm

The diagram is not drawn accurately.



Work out the PERIMETER of the semicircle.
[3 marks]

Answer _____ cm

[Turn over]

12



SECTION B

Answer ALL questions in the spaces provided.

6 HOLIDAY

Ruth is on holiday.

- 6 (a)** The hotel where Ruth is staying has
a total of 720 rooms
four different types of room.

The table shows information about the rooms.

Type of room	Fraction of total rooms
Single	$\frac{11}{40}$
Double	$\frac{7}{16}$
Family	
Luxury	$\frac{1}{5}$



6 (b) During the holiday each guest visits either a castle, a zoo or a museum.

The probability that a guest, chosen at random, visits the castle is 0.55

visits the zoo is TWICE the probability that they visit the museum.

Two guests are chosen at random.

Work out the probability that BOTH guests visit the museum. [4 marks]

Answer _____

[Turn over]



- 6 (c) Ruth saves £3000 to pay for another holiday in 4 years' time.

She sees adverts for two banks.

BANK A 2.1% COMPOUND interest per year	BANK B 1.6% SIMPLE interest per year
----------------------------------------------------------------	--------------------------------------------------------------

Ruth says,

“The total interest for 4 years will be at least £65 GREATER if I invest the £3000 in Bank A.”

Show that she is correct. [5 marks]



[Turn over]

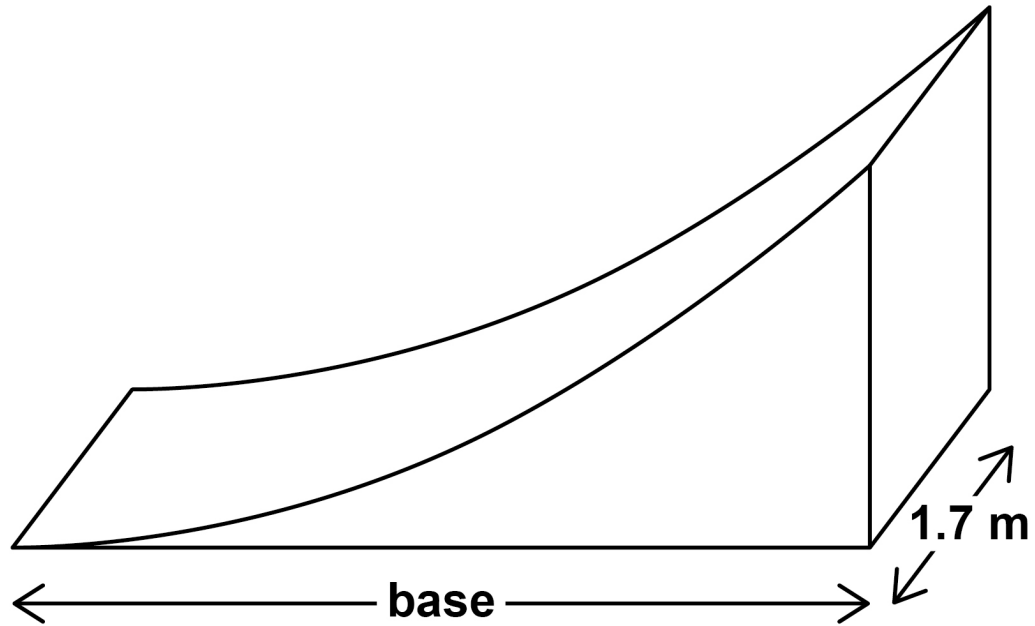
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7 SKATEBOARDING

Jess is organising a skateboarding competition.

7 (a) Here is a diagram of a skateboarding ramp.



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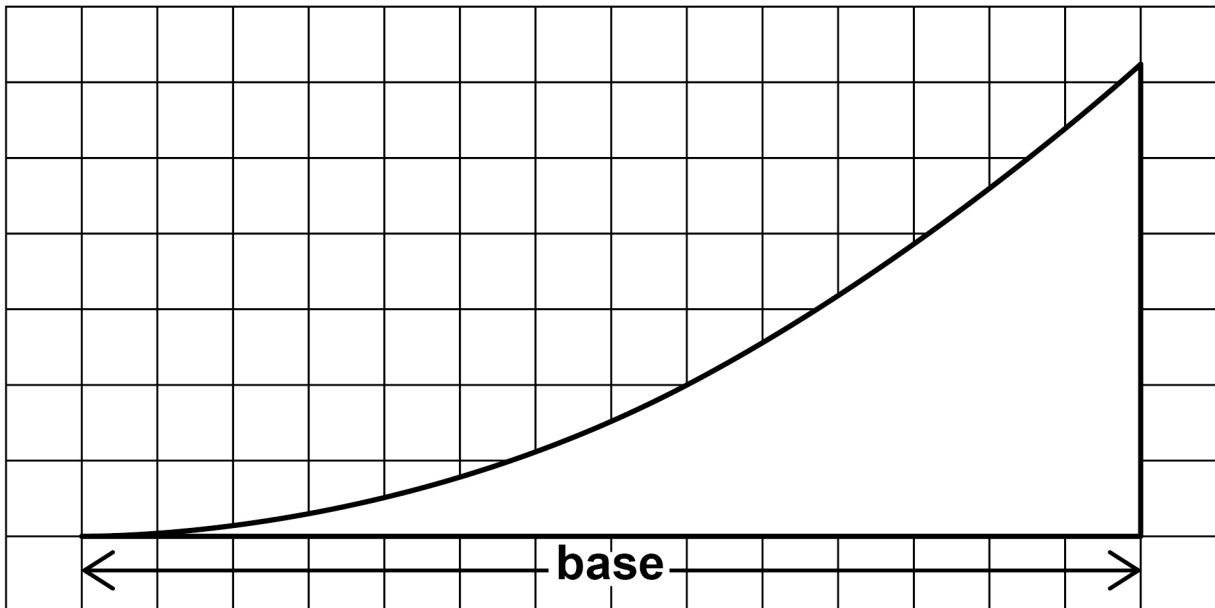
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Here is a scale drawing of the front elevation of the skateboarding ramp.

It is drawn on square paper.

Scale: 2 squares represents 0.3 metres



Here is the formula to calculate the volume of the ramp.

$$\text{Volume} = (\text{length of base})^3 \times 1.7 \div 12$$



7 (b) 160 skateboarders enter the competition.

The skateboarders are adults or children.

Each skateboarder does the Yogi run OR the Zulu run.

40% of the skateboarders do the Zulu run.

18 of the children do the Yogi run.

20 MORE adults do the Yogi run than the Zulu run.

One skateboarder is chosen at random.

Work out the probability that the skateboarder is a CHILD.

You may use the table to help you. [6 marks]

	Yogi	Zulu	Total
Child	18		
Adult			
Total			160



8 WALKING MARATHON

Janik is walking a marathon to raise money for charity.

8 (a) The marathon is 26.2 miles long.

Janik

starts at 9.30 am

walks at a constant speed of 4 miles per hour

takes 3 breaks that are 15 minutes each.

Will Janik finish the marathon before 5 pm?

You MUST show your working. [4 marks]

8 (b) This year 30 000 people walked the marathon.

The table shows the time it took the walkers to complete the marathon.

Time, t (hours)	Frequency	Mid-point	
$5 < t \leq 7$	5001		
$7 < t \leq 9$	14 516		
$9 < t \leq 11$	8465		
$11 < t \leq 13$	2018		
	Total = 30 000		

Last year, the mean time was 9.2 hours.

The marathon organiser says,

“This year, the mean time was lower by **MORE THAN** half an hour.”

Is the organiser correct?

You **MUST** show your working. [5 marks]



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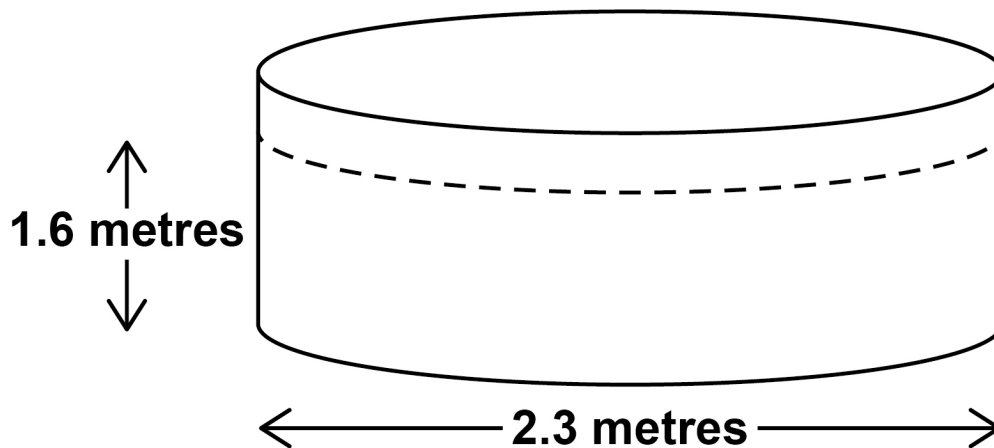
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9 GARDEN POOL

Chen has a pool in his garden.

9 (a) Chen's pool is cylindrical.



The diameter of the pool is 2.3 metres.

Chen wants the depth of the water to be 1.6 metres.

The hosepipe fills the pool at a rate of 50 litres every 4 minutes.

1000 litres = 1 cubic metre

How many minutes will it take for the pool to go from empty to the required depth? [6 marks]



9 (b) Chen needs to buy 3 gallons of cleaning chemical to put in the pool.

He sees this advert online.

<p>Pool cleaning chemical</p> <p>£8.49 per 1-litre bottle</p> <p>Buy 4 or more bottles and get $\frac{1}{6}$ off the total cost</p>

Chen says,

“It will cost LESS THAN £100 to buy the bottles of chemical I need.”

Is Chen correct?

You MUST show your working.

1 gallon = 4.546 litres [6 marks]



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For Examiner's Use	
Question	Mark
1–5	
6	
7	
8	
9	
TOTAL	

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