

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

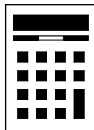
## Paper 2 Calculator

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

### Advice

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

For Examiner's Use	
Question	Mark
1–7	
8	
9	
10	
11	
<b>TOTAL</b>	



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

- 1** Circle the **smallest** number.

**[1 mark]**

1

-5

-3

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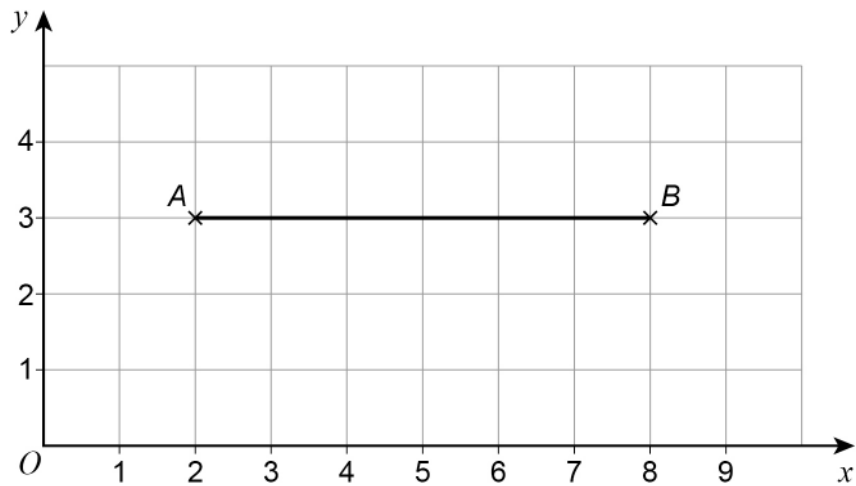
- 2** Complete the table to show equivalent fractions, decimals and percentages.

**[3 marks]**

Fraction	Decimal	Percentage
$\frac{17}{20}$	0.85	
$\frac{1}{25}$		4%
	0.59	59%



- 3  $A(2, 3)$  and  $B(8, 3)$  are points on a grid.



Work out the coordinates of the **midpoint** of line  $AB$ .

[1 mark]

Answer ( \_\_\_\_\_ , \_\_\_\_\_ )

- 4 Here are six numbers.

7                  10                  13                  7                  15                  8

Work out the median.

[2 marks]

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Answer \_\_\_\_\_

Turn over ►



5 Express 76 as a percentage of 200

[1 mark]

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Answer \_\_\_\_\_ %

6 Share 126 in the ratio 3 : 11

[2 marks]

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Answer \_\_\_\_\_ and \_\_\_\_\_



- 7 Which is closer to 9.5  
9.073 or 9.916 ?

You **must** show your working.

[2 marks]

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Answer \_\_\_\_\_

12

**Turn over for the next section**

**Turn over ►**



**Section B**

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

**8 Pets**

- 8 (a)** Miya manages a pet shop.  
She reduces the price of all fish tanks by 17%  
She puts this sticker on one of the tanks.

Reduced by 17%  
Was £195  
Now £167.95

Has Miya calculated the new price correctly?  
You **must** show your working.

**[3 marks]**

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- 8 (b)** Alex makes food for his dogs.  
He uses 2 **pounds** of mince to make 12 portions of food.  
He has 1.5 **kilograms** of mince.  
Is this enough to make 21 portions of food?  
Use 1 kg = 2.2 pounds  
You **must** show your working.

**[3 marks]**

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**Question 8 continues on the next page**

**Turn over ►**



8 (c) Sophie has a hutch for her pet rabbit.

The floor area of the hutch is  $4.46 \text{ m}^2$

Sophie builds a new hutch with the floor in the shape of a regular octagon.

$$\text{Area of a regular octagon} = 2s^2(1 + \sqrt{2})$$

where  $s$  is the side length

The side length of the floor of the new hutch is 1.1 m

How much bigger is the floor area of the new hutch than the floor area of the old hutch?

**[3 marks]**

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Answer \_\_\_\_\_  $\text{m}^2$

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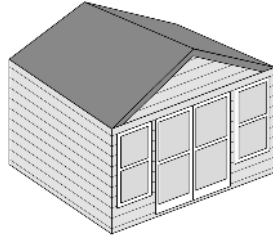


**9 Summer house**

Lisa is buying a summer house for her garden.

**9 (a)**

Summer house	£5964
Delivery charge	£2.25 per mile

**Payment plan**

Deposit of  $\frac{2}{7}$  of the total price including delivery  
then 12 equal monthly payments

Lisa buys the summer house, with a delivery charge for 84 miles.  
She uses the payment plan.

Work out the deposit and the amount of each monthly payment.

**[6 marks]**


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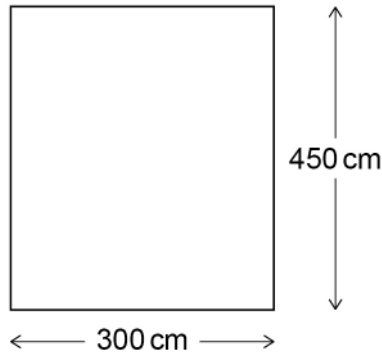
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Deposit £ \_\_\_\_\_

Monthly payment £ \_\_\_\_\_

**Turn over ►**

**9 (b)** The base of the summer house has dimensions 300 cm by 450 cm



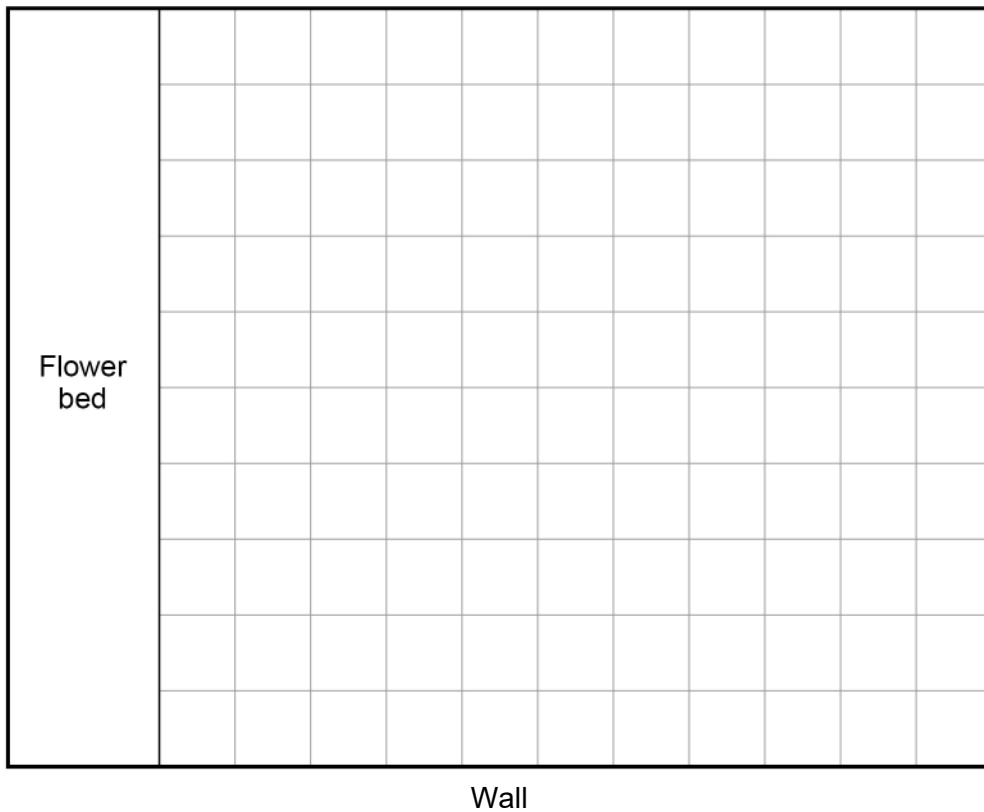
Not drawn  
accurately

Lisa's garden is drawn to a scale of 1 to 100 on a centimetre grid.  
There is a wall at the bottom of the garden and a flower bed down one side.  
Lisa wants to put the summer house  
at least 400 cm from the wall  
and  
at least 500 cm from the flower bed.

On the centimetre grid, show where Lisa can put the summer house.

**[3 marks]**

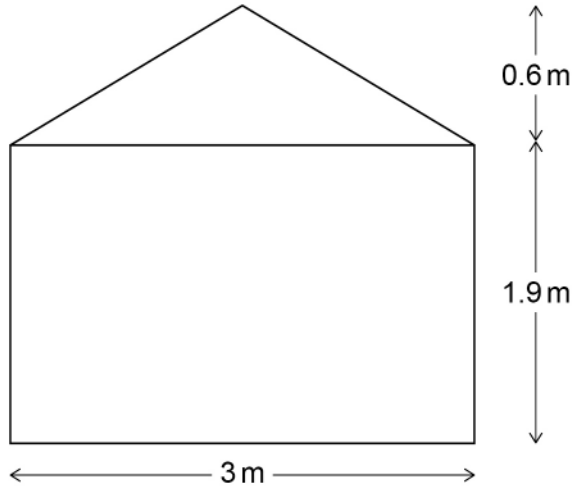
**Scale:** 1 to 100



- 9 (c) Lisa is buying a heater for the summer house.  
To work out the correct heater size she uses the formula

$$\text{Minimum heater size (kW)} = \text{area of the front (m}^2\text{)} \times \text{length (m)} \times 0.058$$

Here is the front view of the summer house.



Not drawn  
accurately

The length of the summer house is 4.5 m  
Lisa can buy a 1 kW heater or a 2 kW heater.

Which heater should she buy?  
You **must** show your working.

[5 marks]

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Answer \_\_\_\_\_



**10 Earnings and saving**

**10 (a)** Jamal works for a company.  
His normal rate of pay is £9.50 per hour.  
His overtime rate of pay is 1.5 times his normal rate.

One week, Jamal works  
38 hours at his normal rate  
and  
6 hours overtime.

From his earnings, the company deducts  
Income Tax at 20% on his earnings over £242  
National Insurance at 12% on his earnings over £184

Work out Jamal’s net pay that week, after Income Tax and National Insurance are deducted.

**[7 marks]**

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Answer £ \_\_\_\_\_



**10 (b)** Jamal decides to put £2500 in a savings account for 3 years.  
He compares the interest paid by two banks.

<p><b>Bank A</b></p> <p>1.4% compound interest per year</p>
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<p><b>Bank B</b></p> <p>Year 1 – no interest added Year 2 – £49.15 interest added Year 3 – £56.30 interest added</p>
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Which bank should Jamal choose, A or B?

You **must** show your working.

**[5 marks]**

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Answer \_\_\_\_\_

<hr/> <p>12</p>
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**Turn over ►**



**11      Soft Play Centre**

- 11 (a)**      At a soft play centre one morning,  
                  there are 6 staff on duty  
                  the ratio of staff to children is 2 : 17  
 35 of the children are aged under 7  
 How many of the children are aged 7 or over?

**[4 marks]**


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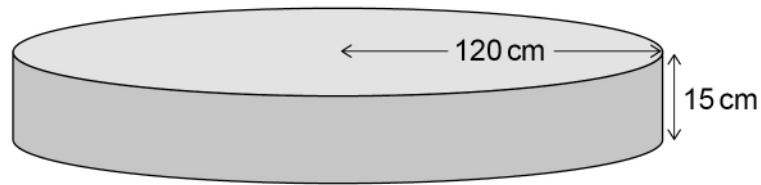


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Answer \_\_\_\_\_



- 11 (b)** A new sand pit is built at the soft play centre.  
The sand pit is in the shape of a cylinder of radius 120 cm  
The sand pit will be filled with play sand to a depth of 15 cm



Play sand is sold in 50-litre bags and each bag costs £9.97

$$1 \text{ litre} = 1000 \text{ cm}^3$$

How much will it cost to buy enough bags of sand to fill the sand pit to a depth of 15 cm?

**[6 marks]**

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Answer £ \_\_\_\_\_

**Turn over ►**



- 11 (c) The table shows the ages of children at the centre one day.

Age	Number of children
3 and under	8
4–6	15
7–9	13
10 and over	4

One of the children is chosen at random to win a free soft play visit.

The manager says,

“The probability that the child is aged 7–9 is **more than**  $\frac{3}{10}$ ”

Is the manager correct?

You **must** show your working.

[3 marks]

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13

END OF QUESTIONS





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outside the  
box*

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ANSWER IN THE SPACES PROVIDED**







