



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 1

MATHEMATICS

Paper 1 Non-Calculator

Time allowed: 30 minutes

Materials

For this paper you must have:

- mathematical instruments.

You must **not** use a calculator.



| For Examiner's Use | |
|--------------------|------|
| Question | Mark |
| 1-5 | |
| 6 | |
| TOTAL | |

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 20.
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.

Advice

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



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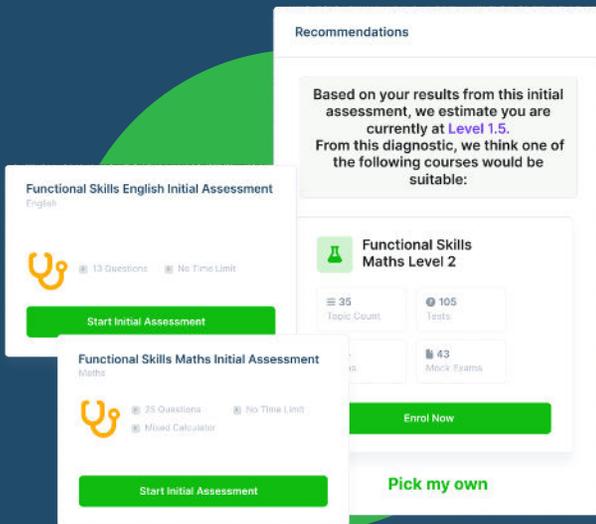
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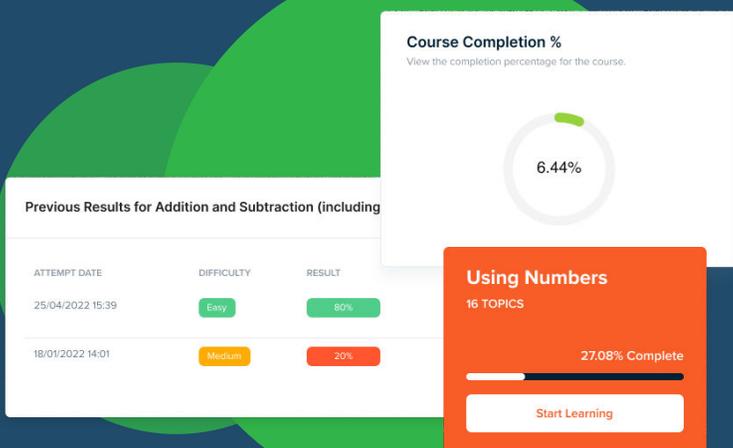
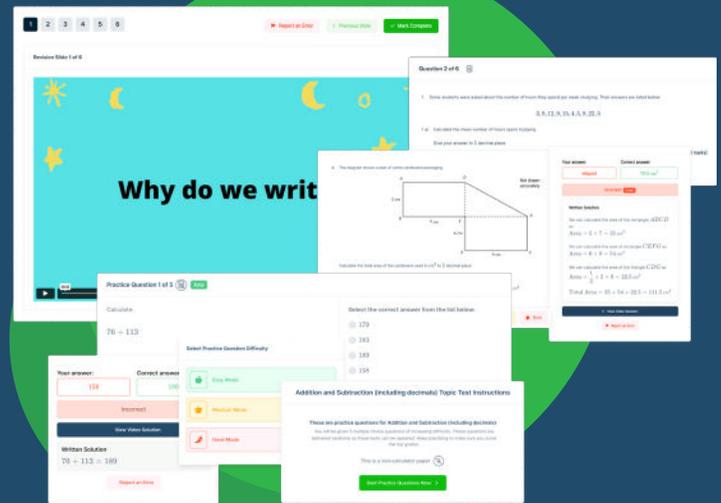


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- ✓ Always know the level you are currently working at
- ✓ Determine when you are ready to sit your exam



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Section A

Answer all questions in the spaces provided.

- 1 Circle the value of 8^2 [1 mark]

 64 16 10 4

- 2 A fair, ordinary dice is rolled.
What is the probability of rolling an even number?
Circle your answer.

[1 mark]

 $\frac{1}{6}$ $\frac{2}{6}$ $\frac{3}{6}$ $\frac{5}{6}$

- 3 Work out $15 - (6 - 2)$ [1 mark]

$$15 - 4 = 11$$

Answer 11

3

4

By rounding 2.97 to the nearest whole number, estimate the answer to

$$45 \times 2.97$$

[2 marks]

$$45 \times 3 = 135$$

Answer 135Do not write
outside the
box

5

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

[3 marks]

| Fraction | Decimal | Percentage |
|----------------|---------|------------|
| $\frac{1}{4}$ | 0.25 | 25% |
| $\frac{2}{5}$ | 0.4 | 40% |
| $\frac{3}{10}$ | 0.3 | 30% |

| |
|---|
| 8 |
|---|

Turn over for the next question

Turn over ►



0 3

Section B

Do not write
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boxAnswer **all** questions in the spaces provided.

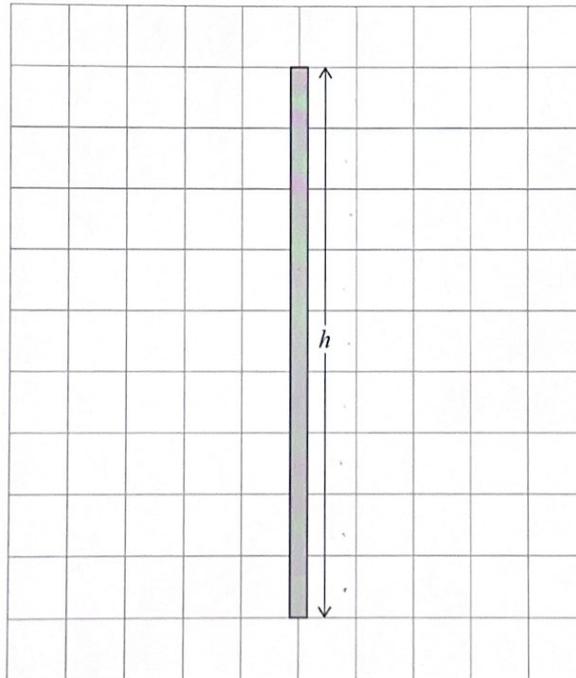
6 Flags

Evie collects flags and flies them from her flagpole.



- 6 (a) Here is a scale drawing, on a centimetre grid, of the side elevation of her flagpole.

Scale: 1 centimetre represents 0.5 metres

Is the height, h , of the flagpole **more than** 4 metres?You **must** show your working.

[3 marks]

$$9 \times 0.5 = 4.5 \text{ metres.}$$

Yes the flagpole is more than 4 metres



- 6 (b) Evie has drawn a pictogram to show the types of flag in her collection.

Key:  represents 2 flags

| | |
|-----------|--|
| Patterned |  |
| Animal |  |
| National |  |
| Plain |  |

Evie says,

"Less than one third of my flags are national flags."

Is Evie correct?

You **must** show your working.

[5 marks]

$$\text{National flags} = 7.5 \times 2 = 15 \text{ flags}$$

$$\begin{aligned} \text{Total flags} &= (3 \times 2) + (5.5 \times 2) + 15 + (2 \times 2) \\ &= 6 + 11 + 15 + 4 = 36 \end{aligned}$$

$$\text{fraction of national flags} = \frac{15}{36} = \frac{5}{12}$$

$$\frac{1}{3} = \frac{4}{12} < \frac{5}{12}$$

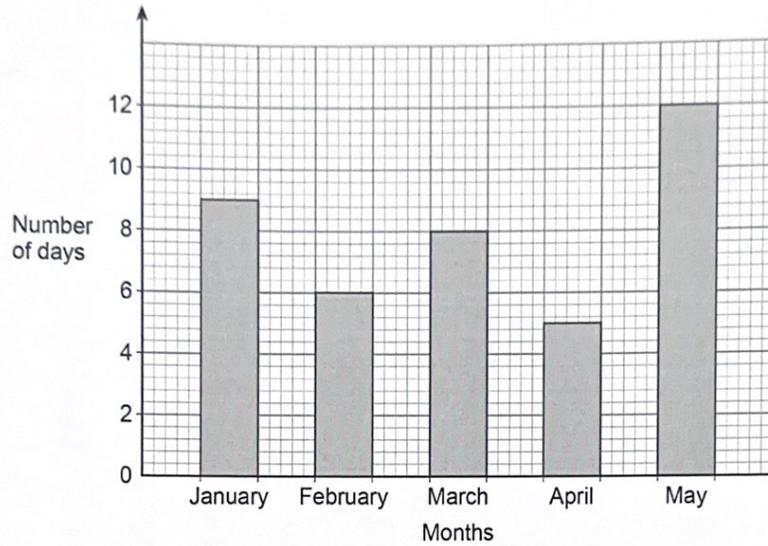
Evie is incorrect $\frac{5}{12}$ of her flags are national flags.

Turn over ►



6 (c) Evie flies flags on special days.

The bar chart shows the number of special days in the months January to May.



In the previous 5 months the mean number of special days per month was 7

Show that the mean is **greater** for the 5 months shown on the bar chart.

[4 marks]

$$9 + 6 + 8 + 5 + 12 = 40$$

$$40 \div 5 = 8$$

The mean for the 5 months on the bar chart is 8, which is greater than 7.

END OF QUESTIONS





Please write clearly in block capitals.

Centre number

| | | | | | |
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| | | | | | |
|--|--|--|--|--|--|

Candidate number

| | | | | |
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| | | | | |
|--|--|--|--|--|

Surname

Forename(s)

Candidate signature

I declare this is my own work.

Functional Skills Level 1

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.
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- 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.

Advice

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

| For Examiner's Use | |
|--------------------|------|
| Question | Mark |
| 1-8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| TOTAL | |



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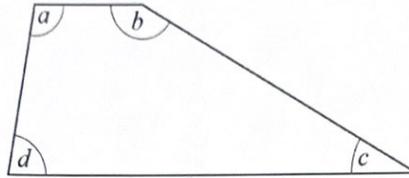
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Section A

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Answer all questions in the spaces provided.

1

Which angle measures 30° ?

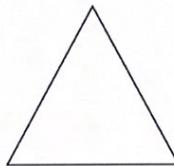
[1 mark]

Answer c

2

How many lines of symmetry does the equilateral triangle have?

[1 mark]



Circle your answer.

1

2

3

6



0 2

3 Write in words 91072

[1 mark]

Ninety-one thousand and Seventy-two

4 One card is chosen at random from these eight number cards.



Write down the probability that the number on the card is less than 2

[1 mark]

Answer $\frac{3}{8}$

5 Put the following decimals in order, starting with the largest.

[2 marks]

0.219

0.25

0.2

0.206

Answer 0.25, 0.219, 0.206, 0.2

Turn over ►



6 Round 9.3583 to 2 decimal places

[1 mark]

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Answer 9.36

7 Increase £126.80 by 15%

[3 marks]

$$126.80 \times 1.15 = \pounds 145.82$$

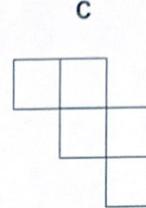
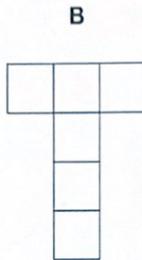
Answer £ 145.82



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box

8 Complete the table for the diagrams below.

[2 marks]



| Description | Diagram letter |
|--|----------------|
| Net of a cube-shaped box with a lid | B |
| Net of a cube-shaped box without a lid | C |

| |
|----|
| 12 |
|----|

Turn over for the next section

Turn over ►



Section B

Do not write
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box

Answer all questions in the spaces provided.

9 Soup

Ross makes and sells soup.

- 9 (a) Ross is making carrot soup.
Here is the recipe.

Carrot soup

makes 2 litres

1.2 kg of carrots

1.4 litres of water

3 onions

Ross wants to make 3 litres of soup.

He already has 500 g of carrots.

Carrots are sold in 750 g packs.

How many packs of carrots does he need to buy?

You **must** show your working.

[5 marks]

$$3 \div 2 = 1.5$$

$$1.2 \times 1.5 = 1.8 \text{ Kg of carrots needed}$$

$$1.8 \text{ Kg} - 0.5 \text{ Kg} = 1.3 \text{ Kg}$$

$$1.3 \div 0.75 = 1.73\dots$$

So 2 packs* of carrots are needed

Answer _____

2



0 6

- 9 (b) Ross has a container in the shape of a cuboid.
Here are the dimensions of the container.

| length | width | height |
|--------|-------|--------|
| 23 cm | 15 cm | 11 cm |

Ross says,

"The container is large enough to hold the 3 litres of carrot soup."

Is Ross correct?

You **must** show your working.

1 litre = 1000 cm³

[3 marks]

$$3 \text{ litres} = \underline{3000 \text{ cm}^3}$$

$$\text{Volume} = 23 \times 15 \times 11 = \underline{3795 \text{ cm}^3}$$

Yes Ross is correct.

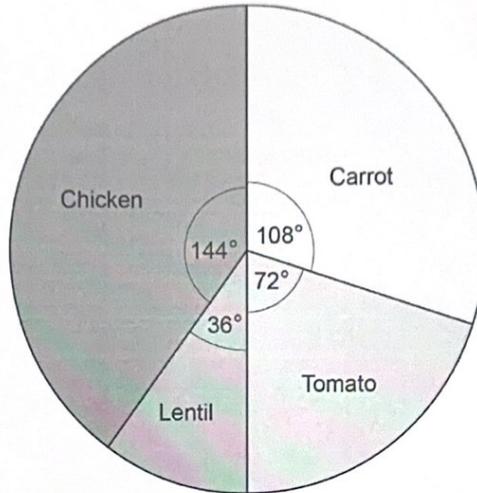
Question 9 continues on the next page

Turn over ►



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9 (c) Ross draws a pie chart to represent the soup he sold one week.



Ross sold 8 litres of **lentil** soup that week.

He sold the **chicken** soup for £3.49 per litre.

How much did he receive that week from selling **chicken** soup?

[4 marks]

$$36 \div 8 = 4.5 \text{ (for 1 litre)}$$

$$144 \div 4.5 = 32 \text{ litres of chicken soup}$$

$$32 \times \pounds 3.49 = \pounds 111.68$$

Answer £ 111.68

12



10 Flooring

Nikki wants to sand and varnish the wooden floors in her house.

10 (a) Nikki wants to hire a sanding tool for 3 days.

She sees adverts for sanding tool hire at two companies.

Tool hire depot

£16 per day

3 days or more,
20% off the total cost

EZ hire company

£15 per day

Hire for 3 days,
3rd day half price

Which company has the cheaper hire cost for 3 days?

You **must** show your working.

[6 marks]

Tool hire depot

$$(16 \times 3) \times 0.8 = \pounds 38.40$$

EZ hire company

$$15 \times 2 = 30$$

$$15 \times 0.5 = 7.5$$

$$\text{Total} = \pounds 30 + \pounds 7.50 = \pounds 37.50$$

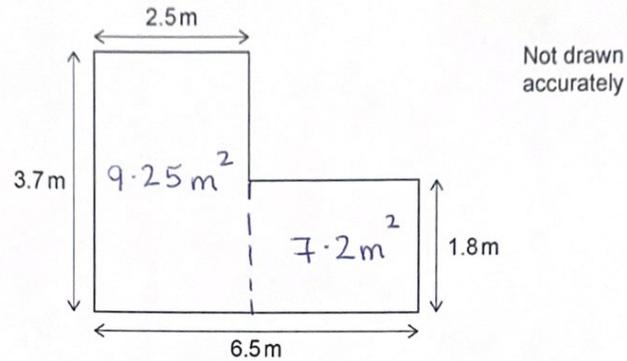
EZ hire company is cheaper.

Turn over ►



- 10 (b) The diagram shows a floor Nikki is going to varnish.

Do not write
outside the
box



Nikki needs 500 ml of varnish for each square metre of floor.

How much varnish does she need for this floor?

[5 marks]

$$3.7 \times 2.5 = 9.25 \text{ m}^2$$

$$(6.5 - 2.5) \times 1.8 = 7.2 \text{ m}^2$$

$$\text{Total area} = 9.25 + 7.2 = 16.45 \text{ m}^2$$

$$\text{Varnish} = 500 \times 16.45 = 8225 \text{ ml}$$

Answer 8225 ml



10 (c) Nikki will take

- 45 minutes to sand the floor
- 20 minutes to clean the floor
- $1\frac{1}{2}$ hours to varnish the floor.

Nikki starts to sand the floor at 10.15 am

Will she have finished the work by 1 pm?

You **must** show your working.

[3 marks]

$$\begin{aligned} \text{Total time} &= 45 + 20 + 90 = 155 \text{ minutes} \\ &= 2 \text{ hours } 35 \text{ minutes} \end{aligned}$$

$$10:15 \text{ am} + 2 \text{ hrs } 35 \text{ min's} = 12:50 \text{ am}$$

Yes Nikki will be finished before 1 pm.

14

Turn over for the next question

Turn over ►



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11 Garden Centre

Zola works for a garden centre.

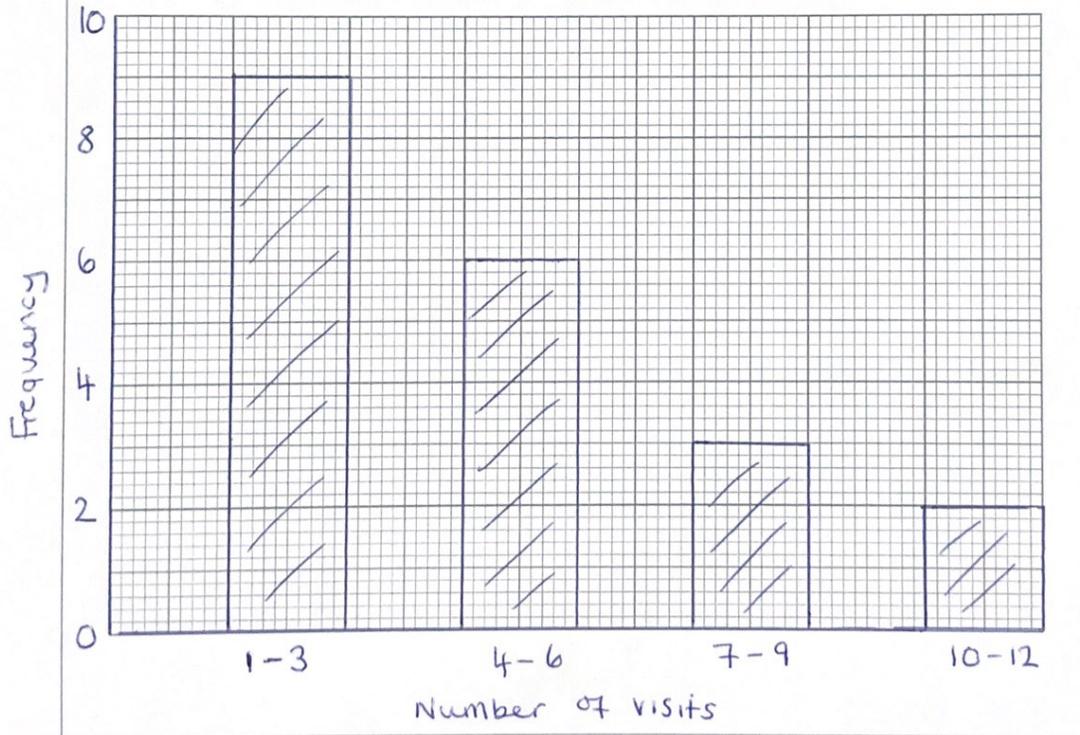
11 (a) Zola asks 20 of the customers how many times they have visited in the past year. She records the results in a tally chart.

The tally chart is shown, but four of the cells have not been filled in.

| Number of visits | Tally | Frequency |
|-------------------|-------|-----------|
| 1-3 | | 9 |
| 4-6 | | 6 |
| 7-9 | | 3 |
| 10-12 | | 2 |
| Total = 20 | | |

Draw a suitable diagram to represent the number of visits to the garden centre.

[6 marks]



- 11 (b) Zola buys plants for her own garden.
She pays staff discount prices for the plants.
The table shows information about the plants she buys.

| Plants | Normal price | Staff discount price |
|-----------------------|--------------|----------------------|
| A rose bush | £19.95 | £8.50 |
| A pack of tulip bulbs | £10.50 | £6.99 |
| A lavender plant | £4.30 | £2.50 |
| A fruit tree | £48 | £22.50 |

Zola says,

"The total cost with the discount prices is **less than** half of the total cost with the normal prices."

Is she correct?

You **must** show your working.

[4 marks]

$$\begin{aligned} \text{Total of normal price} &= 19.95 + 10.50 + 4.30 + 48 \\ &= \pounds 82.75 \end{aligned}$$

$$\begin{aligned} \text{Total staff discount} &= 8.50 + 6.99 + 2.50 + 22.50 \\ &= \pounds 40.49 \end{aligned}$$

$$\frac{40.49}{82.75} = 0.489\dots < 0.5$$

Zola is correct.



12 Electric Car

Kofi wants to buy an electric car.

12 (a) Kofi can buy the car using **Option A** or **Option B**.

| |
|---|
| <p>Option A</p> <p>One payment of £32549</p> |
|---|

| |
|---|
| <p>Option B</p> <p>Pay 10% of £32549 and 48 monthly payments of £638</p> |
|---|

In total, how much more would **Option B** cost than **Option A**?**[5 marks]**

$$\begin{aligned} \text{Option B: } 10\% \text{ of } 32549 &= 32549 \times 0.1 \\ &= \pounds 3254.90 \end{aligned}$$

$$48 \times 638 = \pounds 30624$$

$$\rightarrow \text{total} = 3254.90 + 30624 = \pounds 33878.90$$

$$\text{difference} = 33878.90 - 32549 = \pounds 1329.90$$

Answer £ 1329.90

- 12 (b) Kofi asks an electrician to install a charging point outside his house for his car.
The electrician works out the cost of installation using this formula.

$$\text{Cost of installation} = \text{Price of parts} + \text{£}52.50 \times \text{Number of hours worked}$$

The price of the parts is £794.85

Here are the hours the electrician worked.

| | |
|---------|--------------|
| Monday | 9 am to 1 pm |
| Tuesday | 3 pm to 5 pm |

In total, how much is the cost of the installation?

[3 marks]

$$\text{hours worked} = 4 + 2 = 6$$

$$6 \times \text{£}52.50 = \text{£}315$$

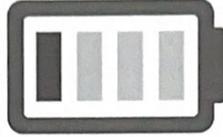
$$\text{Total cost} = 794.85 + 315 = \text{£}1109.85$$

Answer £ 1109.85

Turn over ►



- 12 (c) Kofi buys the car.
The battery in the car can hold 80 kWh of energy.
One morning the battery is $\frac{1}{4}$ full.



The car uses 1 kWh of energy to travel 3.2 miles.
Kofi's work is 28 miles from his home by car.

Is there enough energy left in the battery for Kofi to drive to work **and back**?
You **must** show your working.

[4 marks]

$$80 \div 4 = 20 \text{ kWh}$$

$$20 \times 3.2 = 64 \text{ miles of charge}$$

$$28 \times 2 = 56 \text{ miles to work and back.}$$

Yes there is enough energy in the battery.

12

END OF QUESTIONS

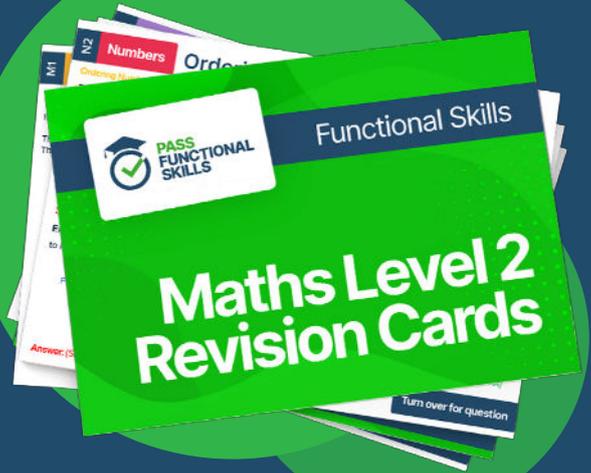




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