

Please write clearly in block capitals.

Centre number

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Candidate number

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Surname

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Forename(s)

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Candidate signature

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# Functional Skills Certificate

## FUNCTIONAL MATHEMATICS

Level 1

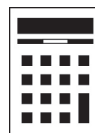
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Wednesday 18 May 2016    Morning    Time allowed: 1 hour 30 minutes

### Materials

For this paper you must have:

- a calculator
- mathematical instruments
- a copy of the data book (examination) (enclosed).



### 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.
- 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.
- Evidence of checking is specifically assessed in Questions 1(d) and 4(a). These questions are indicated with a †.

### Advice

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



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ANSWER IN THE SPACES PROVIDED**



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

**1 Camping in France**

There is a **data sheet** for Camping in France.

Four friends are going on a 7-night camping holiday in France.

They will take their car on the ferry from Portsmouth to Caen.

**1 (a)** They decide to travel on the 0815 ferry on 5th June.

Circle the cost.

**[1 mark]**

£165

£179

£225

£245

**1 (b)** The friends book one tent for 7 nights at Lez Eaux.

They will return on the ferry from Caen at 2300 on 12th June.

They divide the total cost equally between them.

Will **each** of the four friends pay less than £200 for the ferry journeys and campsite?

You **must** show your working.

**[5 marks]**

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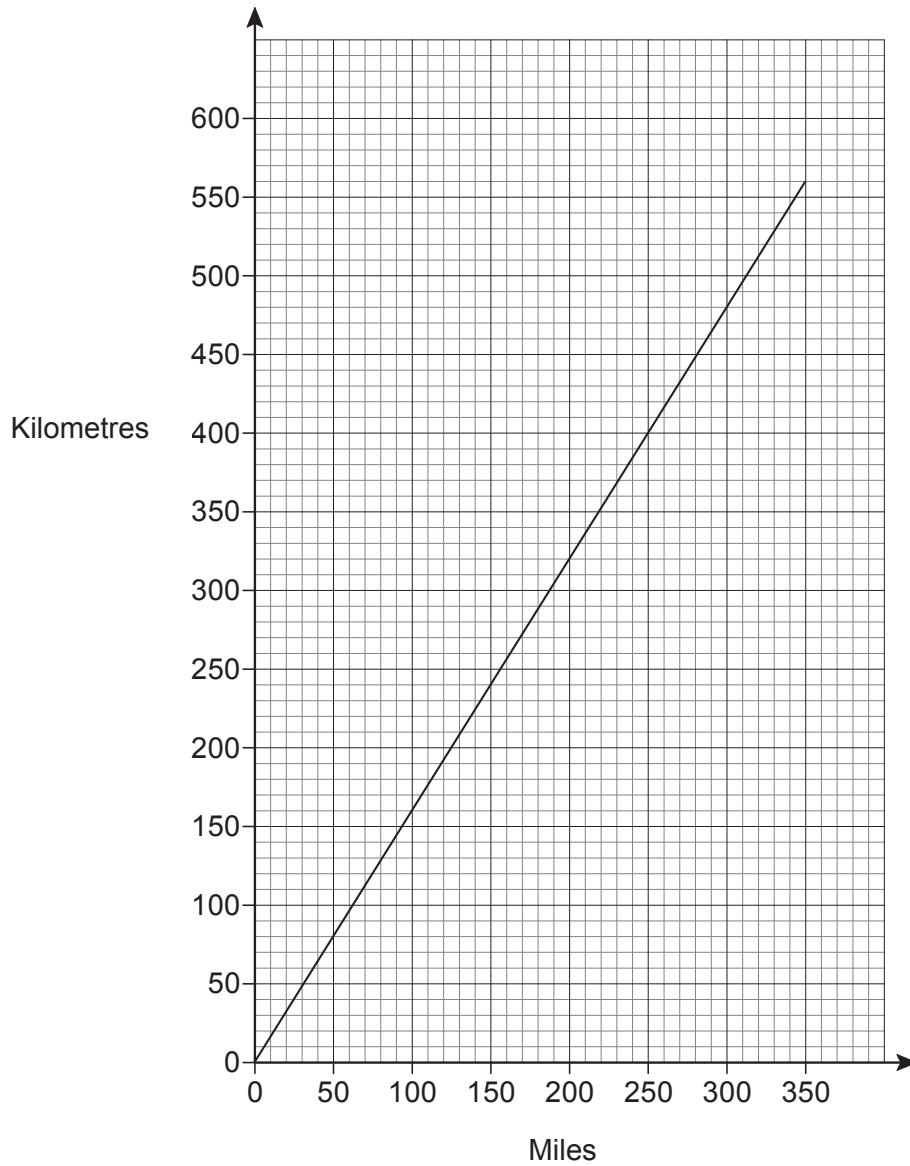
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In France, the friends expect to drive a total of 320 kilometres.

**1 (c)** Use this graph to convert 320 kilometres to miles.

**[1 mark]**



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†1 (d) For their car, petrol costs 12 pence per **mile**.

Work out the cost of the petrol they expect to use in France.

**[2 marks]**

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Check your answer.  
Show how you have done your check.

**[1 mark]**

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**Question 1 continues on the next page**



1(e) The Jones family are planning a 10-night camping holiday in France.



After they arrive in Caen they want to

- spend the first 2 nights at La Croix Paris campsite
- stay at only two other campsites, for at least 3 nights each
- return to Caen to catch the ferry home.

They will drive between each place.

They can drive 80 km each hour.

They want to drive for less than six hours on each journey between campsites.

Complete a possible plan for their holiday on the grid opposite.

**[6 marks]**

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Practise on this grid.

| From | To             | Distance | Number of nights at<br>campsite |
|------|----------------|----------|---------------------------------|
| Caen | La Croix Paris |          |                                 |

Put your answer on this grid.

| From | To             | Distance | Number of nights at<br>campsite |
|------|----------------|----------|---------------------------------|
| Caen | La Croix Paris |          |                                 |



**2 Market stall****Kim**

I sell mugs and pans on my market stall.

Kim buys

200 mugs at £1.25 each

100 pans at £3.80 each.

**2 (a)** Show that Kim pays a total of £630 for the mugs and pans.

**[2 marks]**

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2 (b) Kim sells **all** of the mugs and 65 of the pans at the prices shown below.

|                    |
|--------------------|
| Mugs<br>£1.80 each |
|--------------------|

|                    |
|--------------------|
| Pans<br>£5.20 each |
|--------------------|

She reduces the price of the rest of the pans by 10%  
 She sells all of these pans at the reduced price.

She says,  
 "I have made a profit of more than £225"

Is she correct?  
 You **must** show your working.

[8 marks]

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**2 (c)** On Saturday, Tom, Ali, Wes and Kim all work on the stall.

There are always two of the four people working on the stall.

Tom can only work up to 12 noon.

Ali works for **exactly** 3 hours.

Nobody works for more than 4 hours without a break of at least one hour.

Complete a possible rota.

**[4 marks]**

Practise on this grid.

|                 |  |  |
|-----------------|--|--|
| 7 am - 8 am     |  |  |
| 8 am - 9 am     |  |  |
| 9 am - 10 am    |  |  |
| 10 am - 11 am   |  |  |
| 11 am - 12 noon |  |  |
| 12 noon - 1 pm  |  |  |
| 1 pm - 2 pm     |  |  |
| 2 pm - 3 pm     |  |  |



Put your answer on this grid.

|                 |  |  |
|-----------------|--|--|
| 7 am - 8 am     |  |  |
| 8 am - 9 am     |  |  |
| 9 am - 10 am    |  |  |
| 10 am - 11 am   |  |  |
| 11 am - 12 noon |  |  |
| 12 noon - 1 pm  |  |  |
| 1 pm - 2 pm     |  |  |
| 2 pm - 3 pm     |  |  |

14

**Turn over for the next question**

**Turn over ►**



**3 School newspaper****Laura**

I work on the school newspaper.

**3 (a)** Each copy of the newspaper has 4 sheets of paper.

A ream of paper has 500 sheets.

How many reams of paper are needed for 1500 copies?

**[3 marks]**

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- 3 (b)** Each copy of the newspaper costs 11p to make.  
1500 copies are made.  
1140 copies are given free to students.  
All the other copies are sold for 50p each.

Laura says,

“We have made a profit.”

Is she correct?

You **must** show your working.

[5 marks]

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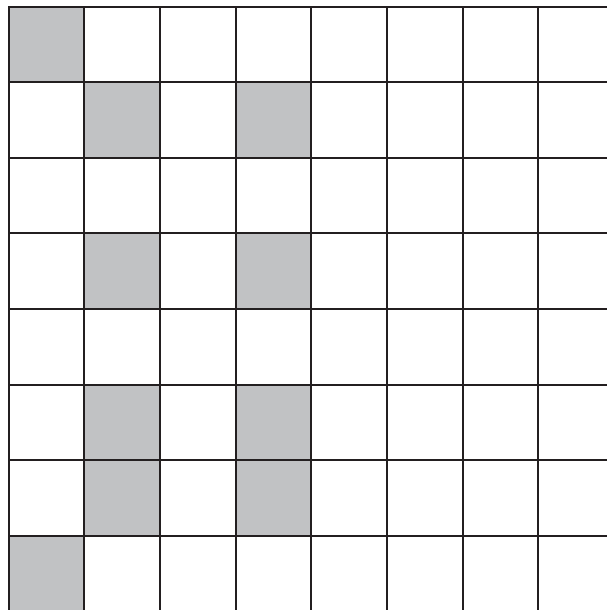


- 3 (c)** Laura is drawing the grid for a crossword.  
The crossword must have one vertical line of symmetry.

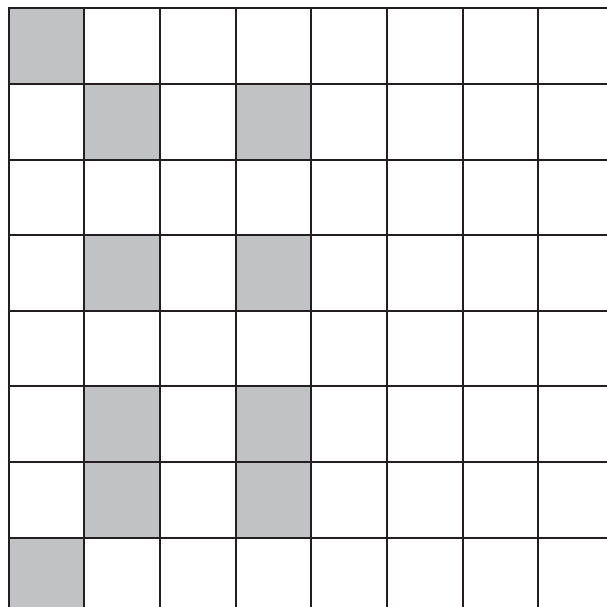
Shade 10 more squares to complete the grid.

**[2 marks]**

Practise on this grid.



Put your answer on this grid.



Rafiq is writing an article for the newspaper.

**3 (d)** Rafiq looks at the number of words he has written in his first 8 lines.

14      17      19      13      13      14      16      14

Work out the mean number of words per line.

**[2 marks]**

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**3 (e)** Rafiq's article should have 750 words.  
The mean number of words per line will stay the same.

He says,

“My article should have 50 lines.”

Is he correct?

You **must** show your working.

**[3 marks]**

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**Turn over for the next question**



**4 Solar panels**

There is a **data sheet** for Solar panels.



**Joe**

I want solar panels on my roof.

**†4 (a)** Joe finds out that he will

- have to pay £7800 for the solar panels
- make savings of £650 per year.

Work out the number of years it will take him to make savings of £7800

**[2 marks]**

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Check your answer.

Show how you have done your check.

**[1 mark]**

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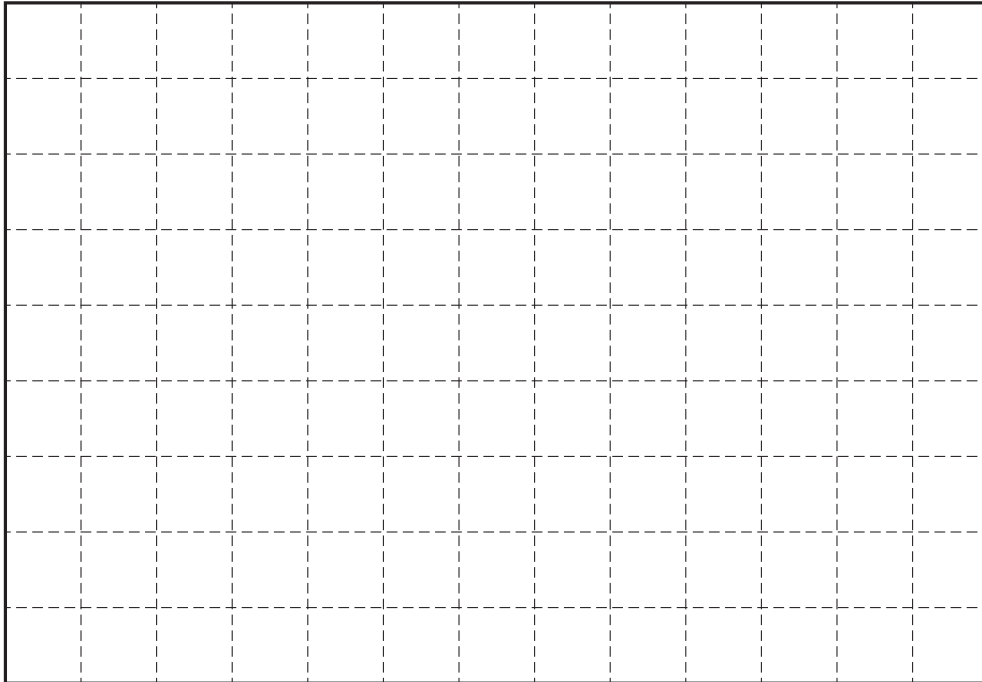
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- 4 (b) The scale drawing shows the space available for solar panels on Joe's roof.

Scale 1 cm represents 50 cm



The solar panels are rectangles 150 cm long by 100 cm wide.

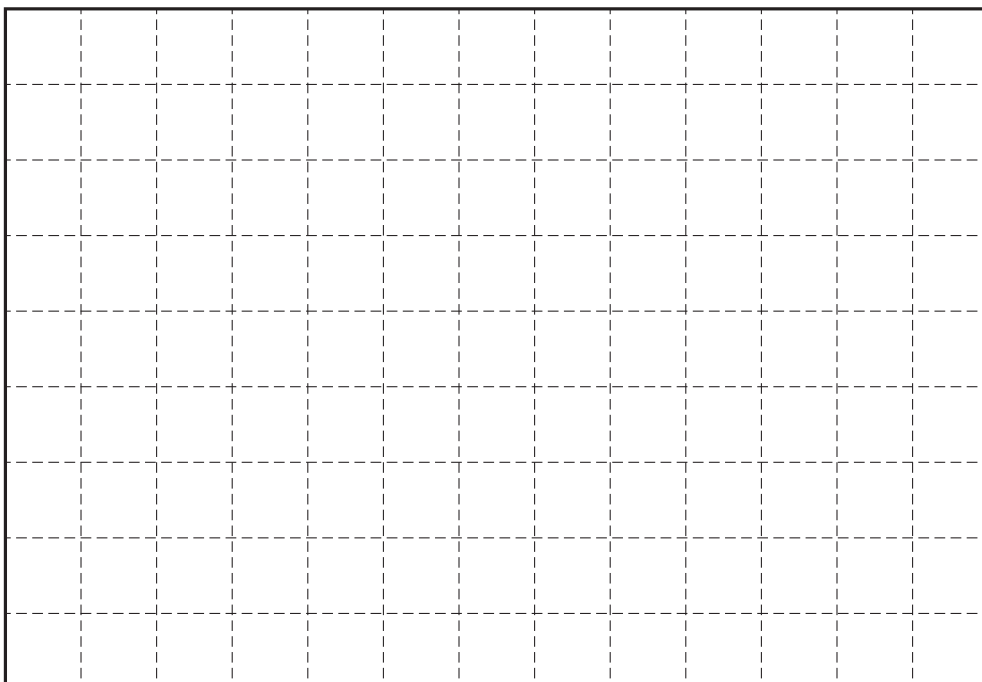
Show how 16 panels could fit on the roof.

Practise on the scale drawing above.

Put your answer on the scale drawing below.

[4 marks]

Scale 1 cm represents 50 cm



Turn over ►





- 4 (d)** Sally has solar panels on her roof.  
She is paid 18 pence for every unit of electricity made by her solar panels.  
The number of units of electricity made by the solar panels is shown on a meter.

Here is her meter at the end of 2014

3463

Here is her meter at the end of 2015

6502

How much should Sally be paid, in total, for the electricity made in 2015?  
Give your answer to the nearest £10

**[3 marks]**

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**END OF QUESTIONS**



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