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# Functional Skills Certificate

## FUNCTIONAL MATHEMATICS

Level 2

Data Book (Examination)

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### Insert

#### Instructions

- This copy of the Data Book is for use in the examination. It should not be given to students in advance.

#### Advice

- This book will not be collected in for marking. Ensure that all working that you wish to have marked is written in the space provided in the question/answer book.

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**4368**

**QAN 500/8702/2**

### Data Sheet for Camping in France

#### Ferry

You can take your car on a ferry to France.

One route you can use is Portsmouth to Caen.

Here is part of the timetable and costs for the ferry.

The costs are for a car and up to four passengers.

#### Portsmouth to Caen

| Times  |        | Cost         |              |              |              |
|--------|--------|--------------|--------------|--------------|--------------|
| Depart | Arrive | Fri 4th June | Sat 5th June | Sun 6th June | Mon 7th June |
| 0815   | 1500   | £235         | £245         | £225         | £179         |
| 1445   | 2130   | £209         | £179         | £179         | £165         |
| 2245   | 0645   | £245         | £275         | £209         | £209         |

#### Caen to Portsmouth

| Times  |        | Cost          |               |               |               |
|--------|--------|---------------|---------------|---------------|---------------|
| Depart | Arrive | Fri 11th June | Sat 12th June | Sun 13th June | Mon 14th June |
| 0830   | 1315   | £165          | £165          | £209          | £209          |
| 1630   | 2115   | £199          | £209          | £245          | £245          |
| 2300   | 0645   | £179          | £199          | £219          | £329          |

## Campsites

In France you can book campsites which have tents for you to stay in.

This chart shows the distances

between Caen and some campsites in France  
and  
between the campsites.

All distances are in kilometres (km).

|                 | Caen | La Croix Paris | La Breche | Point St Gilles | La Foret | Lez Eaux |
|-----------------|------|----------------|-----------|-----------------|----------|----------|
| Caen            |      | 240            | 280       | 416             | 392      | 120      |
| La Croix Paris  | 240  |                | 400       | 656             | 552      | 432      |
| La Breche       | 280  | 400            |           | 370             | 234      | 240      |
| Point St Gilles | 416  | 656            | 370       |                 | 270      | 300      |
| La Foret        | 392  | 552            | 234       | 270             |          | 290      |
| Lez Eaux        | 120  | 432            | 240       | 300             | 290      |          |

For example, the distance between La Croix Paris and La Foret is 552 km

This table shows the cost per tent **per night** at each campsite.  
Each tent can sleep up to six people.

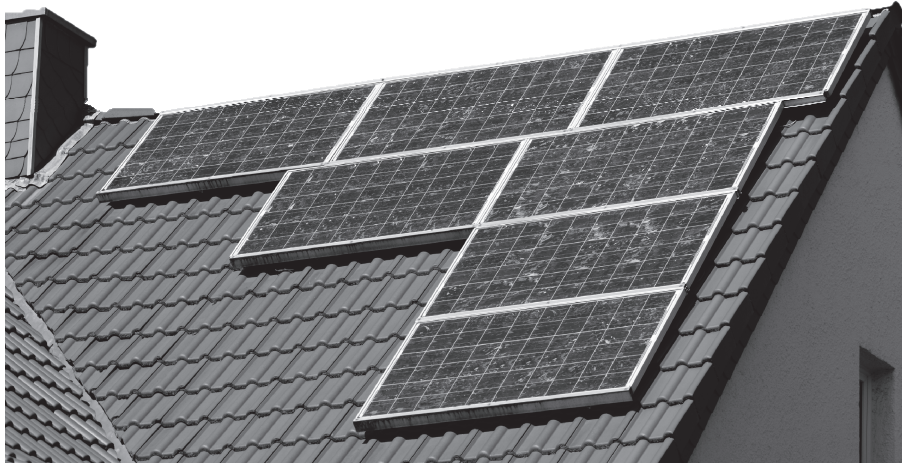
| Campsite        | May | June | July |
|-----------------|-----|------|------|
| La Croix Paris  | £54 | £73  | £105 |
| La Breche       | £25 | £54  | £115 |
| Point St Gilles | £25 | £54  | £115 |
| La Foret        | £29 | £65  | £111 |
| Lez Eaux        | £28 | £52  | £105 |

Turn over ►

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### Data Sheet for Solar panels

Here are 7 solar panels on a roof.



Solar panels use sunlight to make electricity.  
They work when it is cloudy, but work better when it is sunny.

If you have solar panels on your roof,  
you do **not** need to buy as much electricity  
you are paid for all the electricity you make.

The **capacity** of a solar panel is measured in **kilowatts** (kW).  
1 kilowatt = 1000 watts

**Estimating the amount of electricity made**

$e$  is the number of units of electricity made in a month.

Use these steps to estimate the value of  $e$ .

**Step 1** Work out  $a$  using 
$$a = \frac{1}{2}n + s$$

$n$  is the average number of cloudy hours per day

$s$  is the average number of sunny hours per day

**Step 2** Work out  $b$  using 
$$b = a \times c \times f$$

$c$  is the total capacity of the solar panels in kW

$f$  is an efficiency factor

**Step 3** Work out  $e$  using 
$$e = m \times b$$

$m$  is the number of days in the month

**Example**

For solar panels with a total capacity of 3 kW and an efficiency factor of 0.2

In June, when  $n = 11.4$

$$s = 5.5$$

$$m = 30$$

**Step 1** 
$$a = \frac{1}{2} \times 11.4 + 5.5$$

$$a = 11.2$$

**Step 2** 
$$b = 11.2 \times 3 \times 0.2$$

$$b = 6.72$$

**Step 3** 
$$e = 30 \times 6.72$$

$$e = 201.6$$

An estimate of the amount of electricity made in June is 201.6 units.

**END OF DATA**

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