



# Mathematics

Level 2

Challenge: Irish Blarney

**Solutions**

## Task 1

Your first task is to find a suitable hotel to stay in while you are in Dublin. You need to find somewhere:

- in Dublin city
- that includes breakfast in the price
- that is available on the weekend of 24th and 25th August
- is good value taking into account the star rating

Look at the table below and tick the boxes next to the hotels that you think would be suitable.

Name	Location	Breakfast included	Dates available	Cost per person per night	Stars
The Oaks	Dublin	Yes	20.08.10 to 31.06.10	£48	★★
Temple Court	Belfast	Yes	24.08.10 and 25.08.10	£40	★
The Manor	Waterford	No	24.08.10 to 29.08.10	£59	★★
Lynch House	Dublin	No	24.08.10 to 25.08.10	£49	★
Abbey Park	Dublin	Yes	24.09.10 and 25.09.10	£37	★
The Castle	Cork	Yes	01.09.10 to 30.09.10	£83	★★★
The Herrington	Dublin	Yes	24.08.10 and 25.08.10	£42	★★
The Celtic Cross	Dublin	Yes	24.08.10 and 25.08.10	£50	★★★

1      2      3      4



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## Feedback

When you are searching for things such as hotels or holidays on the internet, you are often faced with making a choice from a list of possible options. In this task, there are three hotels that are available, in Dublin and appear to be good value. The one that you choose will depend on whether you want to spend a little more on three star accommodation or whether the cheaper two star looks good enough to stay in.

To get to the possible choices:

- 1** → start by finding all the hotels in Dublin, - 'The Oaks', 'Lynch House', 'Abbey Park', 'The Herrington' and 'The Celtic Cross'
- 2** → then identify which of these hotels include breakfast in the price, - 'The Oaks', 'Abbey Park, 'The Herrington' and 'The Celtic Cross'
- 3** → next, identify which of these hotels available on both the 24th and 25th August, - 'The Oaks', 'Abbey Park, 'The Herrington' and 'The Celtic Cross'
- 4** → this step is about making a value for money choice. Are you willing to pay a little more for a three star hotel? If so 'the Oaks', 'The Herrington' and 'The Celtic Cross' are all valid choices

Which hotel did you choose and why?



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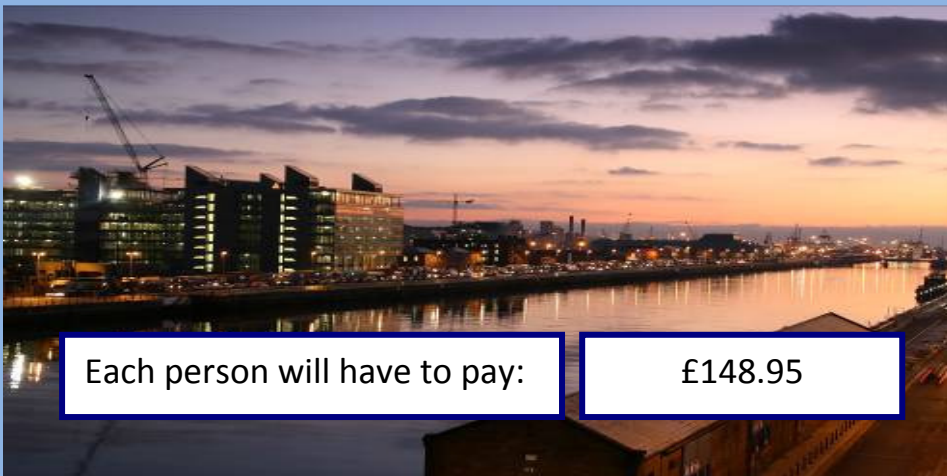
### Task 2

You now need to work out how much each person will have to pay if you and your three friends all share the costs of the trip equally. You've decided to go on a ferry by car and stay 2 nights.

You have found out that:

- the cost of the hotel per person per person night is £49.75
- You reckon you'll do about 260 miles in total, petrol averages £5 a gallon and your car does 40 mpg.
- The ferry costs £24.95 per person plus and extra £65.50 for the car

Work out how much each person should pay.



### Your notes and calculations

Blank area for notes and calculations.



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To work this out you need to work out the total costs then divide the total by four because there is four of you on the trip. Do each calculation separately:

Step 1 - The hotel is 4 people x 2 nights x £49.75

$$4 \times 2 \times \text{£}49.75 = \text{£}398.00$$

Step 2 - The petrol is worked out by calculating the numbers of gallons used then multiplying by the cost per gallon.

$$260 \text{ miles} \div 40 \text{mpg} = 6.5 \text{ gallons}$$

$$6.5 \text{ gallons} \times \text{£}5.00 = \text{£}32.50$$

Step 3 - Ferry costs are four people at £24.95 each plus the car at £65.50.

$$4 \times \text{£}24.95 = \text{£}99.80 + \text{£}65.50 = \text{£}165.30$$

Step 4 - Add together each cost

Hotel	£398.00
Fuel	£32.50
<u>Ferry</u>	<u>£165.30</u>
<b>Total</b>	<b>£595.80</b>

Step 5 – Divide by the number of people travelling

$$\text{£}595.80 \div 4 = \text{£}148.95$$



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## Task 3

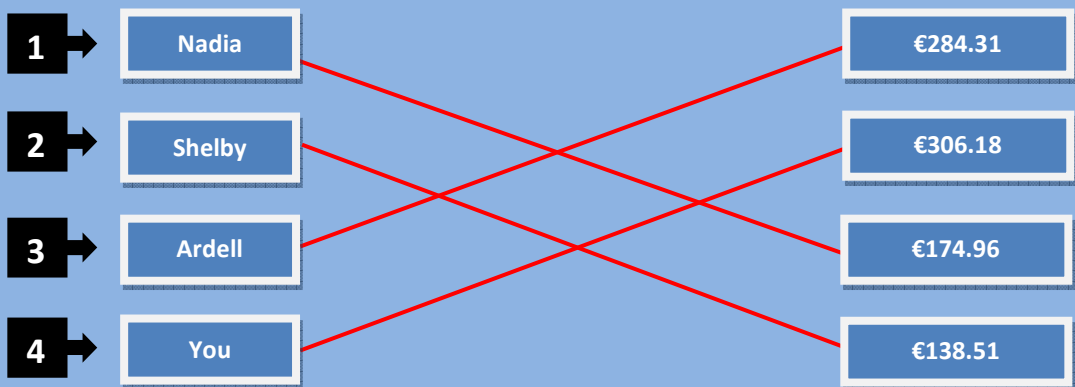
You need to change your spending money from pounds sterling to euros. Your friends have asked you to find out how much they will all get.

This is how much each person has to spend:

- Nadia                    £120
- Shelby                 £95
- Ardell                  £195
- You                     £210

Use the chart to work out the conversion for each person then draw a line from each name to the appropriate amount in euros.

	 US Dollars	 UK Pounds	 Euros	 Japanese Yen
1 US Dollar =	1.000	0.514	0.751	116.760
1 Euro =	1.331	0.685	1.000	155.448
1 UK Pound =	1.941	1.000	1.458	226.723





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To work this out you need to find the exchange rate for pounds sterling to euros. This can be found where the fourth column meets the fourth row - 1.458. This means that for every £1 you will get €1.458 so £100 would get you €145.80

You now need to multiply the amount of spending money by the exchange rate:

**1** → Nadia has £120     $120 \times 1.458 = €174.96$

**2** → Shelby has £95     $95 \times 1.458 = €138.51$

**3** → Ardell has £195     $195 \times 1.458 = €284.31$

**4** → You have £210     $210 \times 1.458 = €306.18$

Current exchange rates can be found in most newspapers and on popular websites. To work out whether they are better or worse, work out how much you would get now. Is this more or less than €145.80?

Does this make a holiday to Spain feel more or less expensive?



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## Task 4

Dublin is in Europe and in common with most of Europe, it uses km as it's main measure of distance. You want to find out how far it is to Dublin via ferry. On a map, you work out that the distance measures approximately 6cm.

If the scale on the map is 1cm : 20km, what is the actual distance you have to travel?

Convert this to miles – 5 miles is about 8km.

If you average 40 miles an hour, how long will it take you to drive from the ferry to Dublin?



Ferry to Dublin (km)

120km

Ferry to Dublin (miles)

75 miles

Time taken

1 hour and  
52.5 minutes

### Feedback

The map scale is 1cm : 20 km so for each 1cm, you would travel 20km. Multiply by 6 and the distance from the Ferry to Dublin is 120km.

$$6 \times 20\text{km} = 120\text{km}$$

To convert from km to miles, first multiply the distance by 5 then divide by 8. The calculation in this case would be:

$$120 \times 5 = 600$$

$$600 \div 8 = 75$$

You have been told your average speed is 40mph so work out how hours this would take you and then convert the decimal part of the hour to minutes by multiplying by 60.

$$75 \div 40 = 1.875 \text{ hours}$$

$$.875 \times 60 = 52.5 \text{ minutes}$$

So the expected travel time is 1 hour 52½ minutes