

Solution

Using the conversion rate of 1 gallon = 4.5 litres

- Unleaded hybrid: 73 mpg \approx 16.2 miles per litre
- Diesel: 66 mpg \approx 14.7 miles per litre

Using the exchange rate of £1 = €1.10

- Unleaded: 129.9c \approx 118.1p
- Diesel: 120.9c \approx 109.9p

Distance travelled per day: 32 miles \times 2 = 64 miles

Distance travelled in a week: 64 miles \times 5 = 320 miles

Unleaded hybrid costs for the week:

- Litres needed for the week: 320 miles \div 16.2 miles per litre \approx 19.8 litres (or \approx 20 litres)
- If bought in Strabane: 20 \times 114.9p = 2298p = £22.98
- If bought in County Donegal: 20 \times 118.1p = 2362p = £23.62

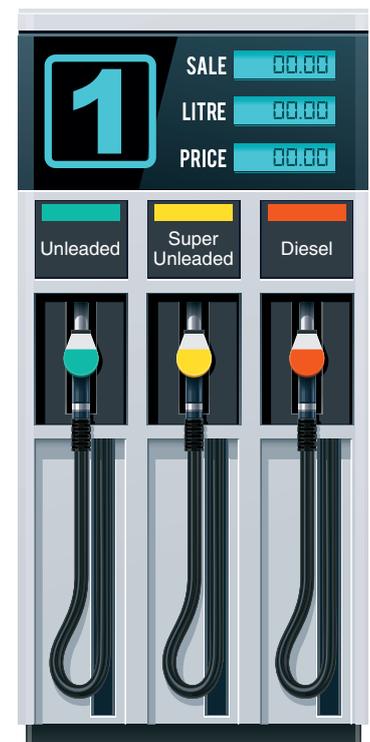
Diesel hybrid costs for the week:

- Litres needed for the week: 320 miles \div 14.7 miles per litre \approx 21.8 litres (or \approx 22 litres)
- If bought in Strabane: 22 \times 115.9p = 2549.8p \approx £25.50
- If bought in County Donegal: 22 \times 109.9p = 2417.8p \approx £24.18

The car with the unleaded hybrid engine is more economical with fuel. Based on all the information provided, Lara will not spend more than the £25 a week she has budgeted for fuel if she chooses this car.

It is also cheaper for Lara to buy unleaded fuel in Strabane rather than in County Donegal using the exchange rates – if she bought £25 worth of fuel at the start of the week she would have more than enough for travelling to and from work each day. This keeps the cost of fuel as small as possible.

Lara could buy the car with a diesel engine and use a petrol station in County Donegal, but she would need to have fuel to travel there first and she would also be using more fuel each week, which is bad for the environment.



Pupils should advise Lara to buy the car with the unleaded hybrid engine and use a petrol station in Strabane when putting fuel in the car.

