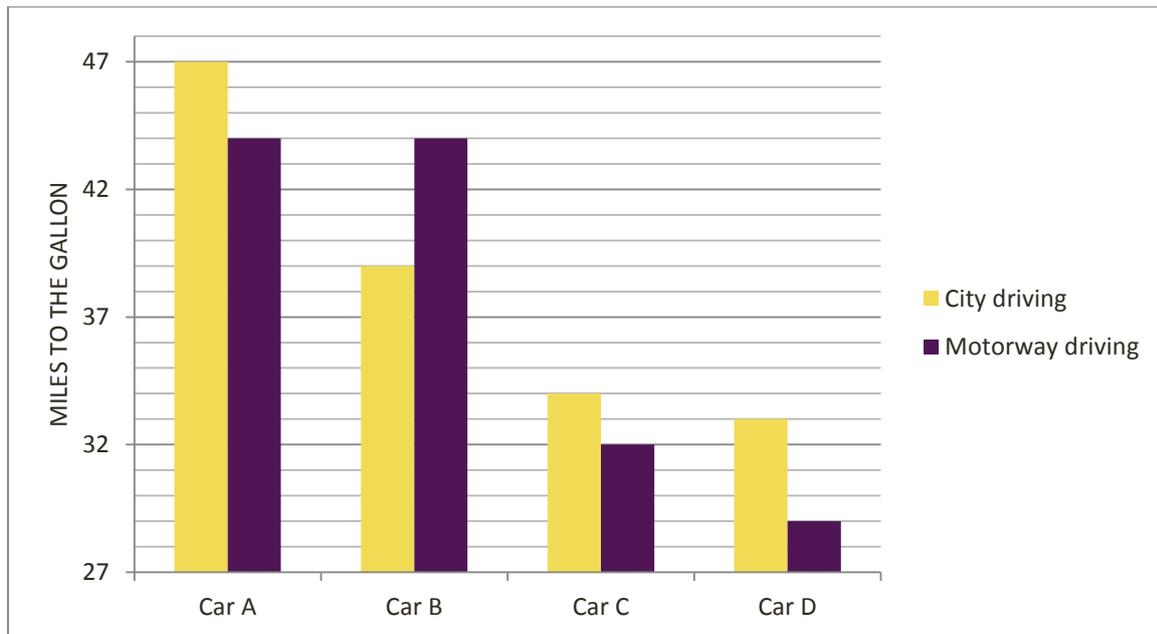


Pricing / Cost Analysis

Many different forms of question arise here. Take care to read the question carefully (twice!) to ensure that you have understood it properly – before you begin any calculations. At the end, reread the question to ensure that you have answered it fully.

Example Fuel Consumption (miles to the gallon)



| Car | Maximum speed (mph) | Cost (£) |
|-----|---------------------|----------|
| A | 70 | 12,250 |
| B | 75 | 15,500 |
| C | 115 | 45,750 |
| D | 90 | 49,000 |

- (i) If a driver drives an average of 2,750 miles per month on motorways in Car B, and fuel costs £4.30 per gallon, what is the predicted annual spend on fuel?

From the bar chart, it is clear that Car B achieves 44 miles to the gallon on motorways. Therefore, the monthly amount of fuel needed is

$$2750 / 44 = 62.5 \text{ gallons}$$

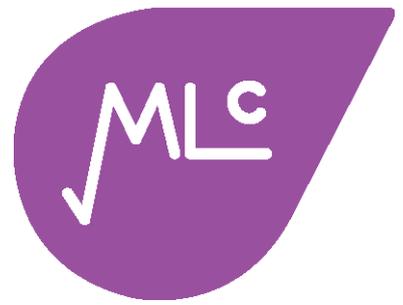
$$\text{The monthly cost of this is } 4.30 \times 62.5 = \text{£}268.75$$

$$\text{The annual spend is therefore } 268.75 \times 12 = \text{£}3,225$$



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- (ii) A company has £300,000 to spend on new company cars. They would like to buy equal numbers of Car A and Car B. What is the largest number of each that they can buy?

From the table, we can see that the costs of Car A and Car B respectively are £12,250 and £15,500. Since the company wants to buy equal numbers of each, we add the costs together to get the total cost of one of each
 $12250 + 15500 = £27750$

We then divide £300,000 by this $300000 / 27750 = 10.8$

Therefore the company can put at most 10 of Car A and 10 of Car B.

Example

Here is the traffic accident information for Newtown.

| | May | Jun | Jul | Aug | Average cost per accident (£) |
|---------------------|-----|-----|-----|-----|-------------------------------|
| Number of Accidents | 7 | 5 | 11 | 11 | 1800 |
| Vehicles on road* | 90 | 73 | 78 | 83 | |

*in thousands

- (i) What was the average accident cost per vehicle on the road in Newtown in May?

In May, we can see that there were 7 accidents with an average cost of £1800. Therefore the total cost of accidents was $7 \times 1800 = £12,600$.

There were 90,000 vehicles on the road in May. Therefore the average accident cost per vehicle is

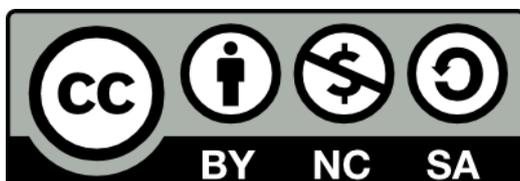
$$12600 / 90000 = £0.14$$

- (ii) If cars are 86% of the vehicles on the road, what was the total accident cost for car drivers for May in Newtown?

We know that there were 90,000 vehicles on the road in May. If 86% of these were cars, then there were $90000 \times 86\% = 77400$ cars on the road in May.

Therefore the total accident cost to car drivers for May was

$$77400 \times 0.14 = £10,836.$$



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