Buying a car

1) You are going to buy a car for £4000. You have saved up a 10% deposit and can pay the rest in 8 monthly deposits. How much is each payment?

2) The car will lose 25% in the first year that you own it. How much will it be worth after a year?

3) The car will lose 20% of this new value *(the answer to Q2)* in the second year. How much will it be worth after the second year?

4) What fraction of its *original* price is the car worth now?

5) There are 4.5 litres in a gallon. A litre of petrol costs 92p. How much does a gallon cost?

6) Diesel costs £4.32 a gallon.

   a) What is the difference between the cost of petrol and diesel *per litre*? (Calc)

   b) What is the percentage difference? (Calc)

7) You buy a petrol car which does 30 mpg. You drive 75 miles per week.

   a) How many gallons a week do you use?

   b) How much will this cost per week?

8) Road tax is £175, maintenance £300 and insurance is £850 (all per annum). What are your total weekly outgoings (tax, maintenance, insurance and *petrol*) once you have paid off the loan? Assume that it doesn't break down!

8) Speed = Distance / Time

   a) Calculate how fast you need to travel to cover 150 miles in 4 hours.

   b) Use the formula to find out how fast you must travel to cover 150 miles in 2 hours and thirty minutes.

   c) Calculate how long it would take to drive to London. Distance = 240 miles. Average speed = 60 mph.

9)   a) How many gallons will you use getting to London and back.

   b) How much will it cost to get to London and back in your car?

10) Another journey costs £36 in fuel. You drive both ways but a friend only travels one way. How much should each of you pay?

Buying a car - Answers

1) You are going to buy a car for £4000. You have saved up a 10% deposit and can pay the rest in 8 monthly deposits. How much is each payment?
10% of £4 000 = £400. £4 000 - £400 = £3 600. £3600 ÷ 8 = **£450**

2) The car will lose 25% in the first year that you own it. How much will it be worth after a year? 25% of £4 000 = £1 000. £4 000 - £1 000 = **£3 000**

3) The car will lose 20% of this new value *(the answer to Q2)* in the second year. How much will it be worth after the second year?
20% of £3 000 = £600. £3 000 - £600 = **£2 400**

4) What fraction of its original price is the car worth now?
2 400 / 4 000 = 24/40 = 6/10 = **3/5**

5) There are 4.5 litres in a gallon. A litre of petrol costs 92p. How much does a gallon cost? 92p x 4.5 = 414p = **£4.14**

6) Diesel costs £4.32 a gallon. So price per litre = 432p ÷ 4.5 = 96p
a) What is the difference between the cost of petrol and diesel per **litre**?
96p – 92p = **4p**
b) What is the percentage difference? (Calc)
4/96 = 0.0416 = **4.16%** (rounds to 4%) so petrol is ~ 4% cheaper than diesel

7) You buy a petrol car which does 30mpg. You drive 75 miles per week.
a) How many gallons a week do you use? 75 ÷ 30 = **2.5 gallons** per week
b) How much will this cost per week? £4.14 x 2.5 = **£10.35**

8) Road tax is £175, maintenance £300 and insurance is £850 (all per annum). What are your total weekly outgoings (tax, maintenance, insurance and *petrol*) once you have paid off the loan? Assume that it doesn't break down!
175 + 300 + 850 = 1325. 1325 ÷ 52 = £25.48 per week.
£25.48 + £10.35 (for petrol) = **£35.83** total cost per week

8) Speed = Distance / Time
a) Calculate how fast you need to travel to cover 150 miles in 4 hours. 50 ÷ 4 = **37.5 mph**
b) Use the formula to find out how fast you must travel to cover 150 miles in 2 hours and thirty minutes. 150 ÷ 2.5 = **60 mph**
c) Calculate how long it would take to drive to London. Distance = 240 miles. Average speed = 60mph. Time = Distance \ Speed. Time = 240 ÷ 60 = **4 hours**

9a) How many gallons will you use getting to London and back.
Total distance to London and back = 2 x 240 = 480 miles. 480 ÷ 30 mpg = **16 gallons**
b) How much will it cost to get to London and back in your car?
16 gallons x £4.14 = **£66.24**

10) Another journey costs £36 in fuel. You drive both ways but a friend only travels one way. How much should each of you pay?
Ratio of your journey distance : your friend's = 2:1 (3 parts altogether).
£36 ÷ 3 = £12. **So you pay £24 and your friend pays £12.**