

N286 Repeated percentage change

Q1.

A ball fell 2 metres onto horizontal ground.

The ball hit the ground and bounced up and down 3 times.

The first time the ball bounced, it rose to 75% of the height it fell from.

The second time the ball bounced, it rose to 75% of the height it reached after the first bounce.

The third time the ball bounced, it rose to 75% of the height it reached after the second bounce.

Work out the height the ball reached after the third bounce.

Give your answer correct to 2 decimal places.

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(Total for question = 3 marks)

Q2.

Becky buys a new car for £20 000

The value of this car will depreciate

by 15% at the end of the first year

then by 10% at the end of every year after the first year.

After how many years will the car have a value of less than £15 000?

You must show all your working.

(Total for Question is 4 marks)

Q3.

Sakira invested £3550 in a savings account for 3 years.

She was paid 2.6% per annum compound interest for each of the first 2 years.
She was paid $R\%$ interest for the third year.

Sakira had £3819.21 in her savings account at the end of the 3 years.

Work out the value of R .

Give your answer correct to 1 decimal place.

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(Total for question = 3 marks)

Q4.

In a sale, the price of a TV is reduced by 25%

A week later, the sale price of the TV is reduced by 15%

The price of the TV is now £293.25

What was the price of the TV before the sale?

£

(Total for question = 3 marks)

Q5.

* This notice was in a car magazine.

Most new cars lose more than half of their value
in the first three years

Paul bought a new car. The value of the car was £15 000

In the first year, the value of the car depreciated by 23%.

After the first year, the value of the car depreciated by 18% each year.

Work out if Paul's car lost more than half of its value by the end of three years.

(Total for question = 4 marks)

Q6.

In a sale, the price of a sofa is reduced by 20%

A week later, the sale price of the sofa is reduced by 10%

The price of the sofa is now £180

What was the price of the sofa before the sale?

£

(Total for question = 3 marks)