

Repeated percentage decrease

Maths

Mr Clasper



Repeated percentage decrease

1. Each calculation below is incorrect.

Correct each calculation

Decrease 60 by 10% then 5%

$$60 \times 1.1 \times 1.5$$

Decrease 724 by 20% then 50%

$$724 \times 0.2 \times 0.5$$

Decrease 92 by 23% then 5%

$$92 \times 0.77 \times 0.5$$

2. Write a single calculation which would decrease 300 by 10%, then 50%

3. Decrease 600 km by 5%, then 2%

4. A house is put up for sale at £120 000. The sale price will decrease in value by 2% every month. What will the sale price be after 3 months?



Repeated percentage decrease

5. There are 20 million penguins currently living in Antarctica. Their population decreases by 3% every year. How many penguins will live in Antarctica in 2 years?

6. A car, valued at £2300 depreciates in value by 5.3% every year. How much is the car worth after 10 years? Give your answer to the nearest pound

7. Goldwick's and Silverman's are two jewellery shops who sell all jewellery for the same price

Goldwick's offers 20% off, followed by another 15% for new customers

Silverman's offers 30%, followed by 5% for new customers

Which shop has the best deal for new customers?



Answers



Repeated percentage decrease

1. Each calculation below is incorrect.
Correct each calculation

Decrease 60 by 10% then 5%

$$60 \times 1.1 \times 1.5 \quad 60 \times 0.9 \times 0.95$$

Decrease 724 by 20% then 50%

$$724 \times 0.2 \times 0.5 \quad 724 \times 0.8 \times 0.5$$

Decrease 92 by 23% then 5%

$$92 \times 0.77 \times 0.5 \quad 92 \times 0.77 \times 0.95$$

2. Write a single calculation which would decrease 300 by 10%, then 50%

$$300 \times 0.9 \times 0.5$$

3. Decrease 600 km by 5%, then 2%

$$600 \times 0.95 \times 0.98 = 558.6 \text{ km}$$

4. A house is put up for sale at £120 000. The sale price will decrease in value by 2% every month. What will the sale price be after 3 months?

$$120\,000 \times 0.98^3 = \text{£}112\,943$$



Repeated percentage decrease

5. There are 20 million penguins currently living in Antarctica. Their population decreases by 3% every year. How many penguins will live in Antarctica in 2 years?

$$20\,000\,000 \times 0.97^2 = 18\,818\,000$$

6. A car, valued at £2300 depreciates in value by 5.3% every year. How much is the car worth after 10 years? Give your answer to the nearest pound

$$2\,300 \times 0.947^{10} = 1\,334.22055\dots$$

£1 334

7. Goldwick's and Silverman's are two jewellery shops who sell all jewellery for the same price

Goldwick's offers 20% off, followed by another 15% for new customers

$$0.8 \times 0.85 = 0.68$$

Silverman's offers 30%, followed by 5% for new customers

$$0.7 \times 0.95 = 0.665$$

Which shop has the best deal for new customers?

Silverman's offers a better discount

