

GCSE Predicted Topic Questions

Percentage change

Example 1

Banana computers sold 19.3 million computers in 2011. In 2012, they sold 18.2 million computers. Work out the percentage change in the amount of computers sold.

Give your answer to three significant figures.

$$\text{Percentage change} = \frac{\text{change}}{\text{original}} \times 100$$

$$\begin{aligned} \text{Percentage change} &= \frac{18.2 - 19.3}{19.3} \times 100 \\ &= -5.69948\dots\% \\ &= 5.70\% \end{aligned}$$

Example 2

Kate buys a pack of 50 cans of Lemonade. She pays £17 for the cans.

Kate sells 32 of the cans for 50p each.

She sells the remaining cans for 20p each.

Work out Kate's percentage profit. $32 \times 0.5 = 16$

$$\text{Percentage change} = \frac{\text{change}}{\text{original}} \times 100$$

$$18 \times 0.2 = 3.6$$

$$16 + 3.6 = 19.60$$

$$\begin{aligned} \text{Percentage profit} &= \frac{19.60 - 17}{17} \times 100 \\ &= 15.2941\dots\% \\ &= 15.3\% \end{aligned}$$

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Example 3

Alan buys 1.2kg of potatoes.

He pays £ 2.25 for the potatoes.

Alan puts the potatoes into bags.

He puts 150g of potatoes in each bag.

He sells each bag of potatoes for 30p.

Work out Alan's percentage profit

Solution:

$$1.2 \text{ kg} = 1200\text{g}$$

Alan puts potatoes into 8 bags

$$\text{as } \frac{1200}{150} = 8 \text{ bags}$$

Alan sells all bags for $8 \times 0.3 = \text{£ } 2.4$

$$\text{Percentage change} = \frac{\text{change}}{\text{original}} \times 100$$

$$\begin{aligned} \text{Percentage profit} &= \frac{2.4 - 2.25}{2.25} \times 100 \\ &= 6.6\% \end{aligned}$$

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Percentage change

- 1 In 2005, the world population was 5.1 billion.
In 2015, the world population was 6.3 billion.

Work out the percentage change in population.
Give your answer correct to 1 decimal place.

(Total for question 1 is 3 marks)

- 2 Kate buys a pack of 40 cans of Lemonade.
She pays £15 for the cans.
Kate sells 32 of the cans for 50p each.
She sells the remaining cans for 20p each.

Work out Kate's percentage profit.

(Total for question 2 is 3 marks)

- 3 Last year Patrick paid £554 for his car insurance.
This year he has to pay £529 for his car insurance.
Work out the percentage decrease in his car insurance.
Give your answer to 1 decimal place.

(Total for question 3 is 3 marks)

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- 4 Donald buys a pack of 6 bottles of water.
The pack cost £ 1.25.
Donald sells all 6 bottles of water for 50p each.

Work out Donalds percentage profit.

(Total for question 4 is 3 marks)

- 5 John buys 1.5 kg of sweets.
He pays £ 1.25 for the sweets.
John puts the sweets into bags.
He puts 150g of sweets in each bag.
He sells each bag of sweets for 30p.

Work out John's percentage profit.

(Total for question 5 is 4 marks)

- 6 Last year Mel paid £ 2515 for his annual train ticket. This year he has to pay £ 2635 for his annual train ticket.
Work out the percentage change in his annual train ticket.
Give your answer to 1 decimal place.

(Total for question 6 is 3 marks)

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- 7 Lottie buys a pack of 7 chocolate bars.
The pack costs £2.50
Lottie sells all 7 chocolate bars for 45p each.

Work out Lotties percentages profit.

(Total for question 7 is 3 marks)

- 8 Geri buys 1.2kg of carrots.
She pays £ 2.25 for the carrots.
Geri puts the carrots into bags.
She puts 150g of carrots in each bag.
She sells each bag of carrots for 30p.

Work out Geri's percentage profit.

(Total for question 8 is 4 marks)

- 9 Victoria buys a pack of 50 cans of orange juice.
She pays £ 16 for the cans.
Victoria sells 22 of the cans for 50p each.
She sells the remaining cans for 20p each.

Workout Victoria's percentage profit.

(Total for question 9 is 3 marks)

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- 10 Alan buys a house for £ 325 000.
He sells the house for £ 313 600.

Calculate the percentage change

(Total for question 10 is 3 marks)

- 11 Last year Geri's council tax bill was £ 1615.
This year she has to pay £ 1705 for her council tax.
Work out the percentage change in her council tax bill.
Give your answer to 1 decimal place.

(Total for question 11 is 3 marks)

- 12 Theo buys 28 pack of crisps.
He pays £ 2 for the crisps.
Theo sells each pack for 50p.

Work out Theos percentage profit.

(Total for question 12 is 3 marks)
