

Name: _____

GCSE (1 – 9)

Percentage Change

Instructions

- Use **black** ink or ball-point pen.
- Answer all questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

Information

- The marks for each question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

- 1 Emma buys a house for £201 500
She sells the house for £213 590

Calculate the percentage profit Emma makes.

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

$$\frac{213590 - 201500}{201500} \times 100$$

$$= 6\%$$

.....6.....%

(Total for question 1 is 3 marks)

- 2 Mel buys a house for £352 000
She sells the house for £325 600

Calculate the percentage loss Mel makes.

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

$$\frac{325600 - 352000}{352000} \times 100$$

$$= -7.5\%$$

.....7.5.....%

(Total for question 2 is 3 marks)

- 3 Last year Geri's council tax bill was £1815
This year she has to pay £1906 for her council tax.
Work out the percentage increase in her council tax bill.
Give your answer to 1 decimal place.

$$\frac{1906 - 1815}{1815} \times 100$$

$$5.01377... \%$$

..... 5.0 %

(Total for question 3 is 3 marks)

- 4 Last year Victoria paid £354 for her car insurance.
This year she has to pay £329 for her car insurance.
Work out the percentage decrease in her car insurance.
Give your answer to 1 decimal place.

$$\frac{329 - 354}{354} \times 100$$

$$= -7.06214... \%$$

..... 7.1 %

(Total for question 4 is 3 marks)

- 5 In 2000, the world population was 6.1 billion.
In 2015, the world population was 7.3 billion.

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

$$\frac{7.3 - 6.1}{6.1} \times 100$$

$$19.6721... \%$$

$$\dots\dots\dots 19.7 \dots\dots\dots \%$$

(Total for question 5 is 3 marks)

- 6 Banana computers sold 19.3 million computers in 2017.

In 2018, they sold 18.2 million computers.

Work out the percentage decrease in the number of computers sold.

Give your answer to three significant figures.

$$\frac{18.2 - 19.3}{19.3} \times 100$$

$$= -5.69948... \%$$

$$\dots\dots\dots 5.70 \dots\dots\dots \%$$

(Total for question 6 is 3 marks)

- 7 Last year Patrick paid £2534 for his annual train ticket.
This year he has to pay £2612 for his annual train ticket.

Work out the percentage increase in the cost of his train ticket.
Give your answer correct to 3 significant figures.

$$\frac{2612 - 2534}{2534} \times 100$$

$$3.078137... \%$$

$$\dots\dots\dots 3.08 \dots\dots\dots \%$$

(Total for question 7 is 3 marks)

- 8 The average house price in London in 2017 was £474902
The average house price in London in 2018 was £469538

Calculate the percentage change in house prices between 2017 and 2018.
Give your answer correct to 1 decimal place.

$$\frac{469538 - 474902}{474902} \times 100$$

$$= -1.129496... \%$$

$$\dots\dots\dots -1.1 \dots\dots\dots \%$$

(Total for question 8 is 3 marks)

- 9 Richard buys a car for £13 500
He sells the car for £9 500

Work out Richard's percentage loss.
Give your answer correct to three significant figures.

$$\frac{9500 - 13500}{13500} \times 100$$
$$= -29.6296...%$$

..... 29.6 %

(Total for question 9 is 3 marks)

- 10 Lottie buys a pack of 50 cans of lemonade.
She pays £17 for the cans.

Lottie sells 32 of the cans for 50p each.
She sells the remaining cans for 20p each.

$$32 \times 0.5 = 16$$
$$18 \times 0.2 = 3.6$$

Work out Lottie's percentage profit.
Give your answer correct to three significant figures.

$$\underline{\underline{£19.60}}$$

$$\frac{19.60 - 17}{17} \times 100$$
$$= 15.2941...%$$

..... 15.3 %

(Total for question 10 is 3 marks)

- 11 Karen buys a pack of 8 bottles of water.
The pack costs £1.25

Karen sells all 8 bottles of water for 50p each.

$$8 \times 0.5 = 4$$

Work out Karen's percentage profit.

$$\frac{4 - 1.25}{1.25} \times 100$$

..... 220

(Total for question 11 is 3 marks)

- 12 Theo buys 24 packs of crisps.
He pays £3 for the crisps.

Theo sells each pack of crisps for 50p.

$$24 \times 0.5 = 12$$

Work out Theo's percentage profit.

$$\frac{12 - 3}{3} \times 100$$

..... 300

(Total for question 12 is 3 marks)

- 13 Donald buys a pack of 9 chocolate bars.
The pack costs £2.50

Donald sells all 9 chocolate bars for 45p each.

$$9 \times 0.45 = 4.05$$

Work out Donald's percentage profit.

$$\frac{4.05 - 2.50}{2.50} \times 100$$

..... 6.6 %

(Total for question 13 is 3 marks)

- 14 Alan buys 1.2 kg of sweets. 1200g
He pays £2.25 for the sweets.

Alan puts the sweets into bags.

He puts 150g of sweets in each bag.

He sells each bag of sweets for 30p.

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

Work out Alan's percentage profit.

$$8 \times 0.3 = 2.4$$

$$\frac{2.4 - 2.25}{2.25} \times 100$$

6.6 %

..... 6.6 %

[or 6.7 / 6.67 %]

(Total for question 14 is 4 marks)