



ACHIEVE ACADEMY

GCSE Maths — Foundation Tier

Growth & Decay · Practice Booklet

NAME: _____

CLASS: _____

DATE: _____

☐ Developing

☒ Secure

☐ Greater Depth

Answer every question in the working space provided. Method marks are available for correct working even if the final answer is wrong. Check the time allowed with your tutor before you start.

Growth & Decay

Total marks available: 107

● Growth & Decay

Q1

[3 marks]

At the start of a year, the value of a car is £27,530. During the year it decreases by 12%. Work out the value of the car at the end of the year.

Q2

[2 marks]

Write down the single decimal multiplier used to increase an amount by 6%.

Q3

[3 marks]

At the start of a year, the value of a rare stamp collection is £4,510. During the year it increases by 4%. Work out the value of the rare stamp collection at the end of the year.

Q4

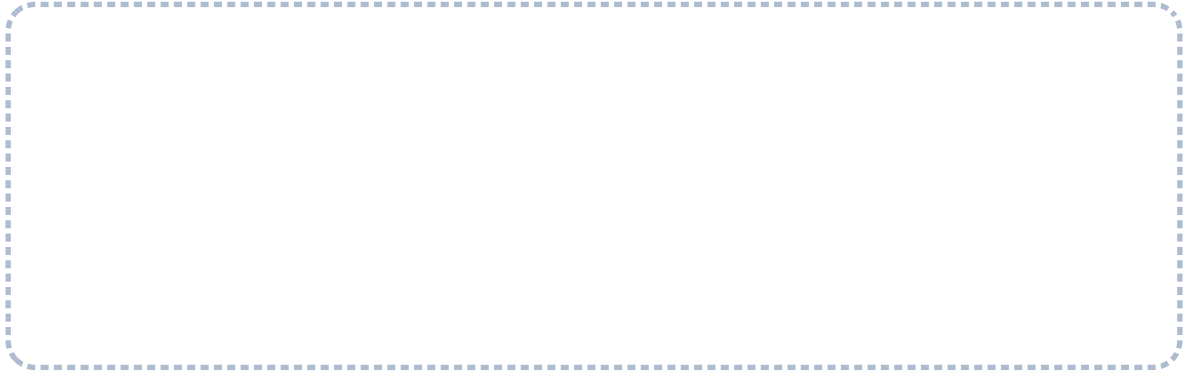
[3 marks]

At the start of a year, the population of a town is 40,400. During the year it increases by 20%. Work out the population of the town at the end of the year.

Q5

[2 marks]

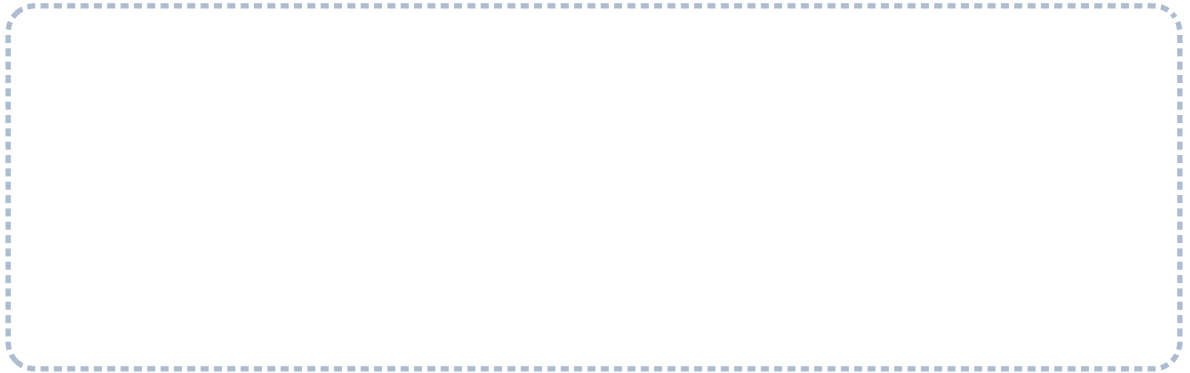
Write down the single decimal multiplier used to decrease an amount by 6%.



Q6

[2 marks]

Write down the single decimal multiplier used to decrease an amount by 20%.



Q7

[3 marks]

At the start of a year, the population of a town is 10,490. During the year it increases by 12%. Work out the population of the town at the end of the year.

Q8

[2 marks]

Write down the single decimal multiplier used to decrease an amount by 2%.

Q9

[2 marks]

Write down the single decimal multiplier used to decrease an amount by 3%.

Q10

[3 marks]

At the start of a year, the value of a car is £10,280. During the year it decreases by 8%. Work out the value of the car at the end of the year.

Q11

[4 marks]

The value of a rare stamp collection is £1,200 now. It increases by 4% each year. Work out the value of the rare stamp collection after 2 years, correct to the nearest penny.

Q12

[3 marks]

The value of a car is £11,300 now. It decreases by 20% each year. Work out the value of the car after 3 years, correct to the nearest penny.

Q13

[4 marks]

The number of bacteria in a culture is 5,600 now. It increases by 2% each year. Work out the number of bacteria in the culture after 2 years, correct to the nearest whole number.

Q14

[4 marks]

The value of a rare stamp collection is £4,000 now. It increases by 8% each year. Work out the value of the rare stamp collection after 3 years, correct to the nearest penny.

Q15

[3 marks]

The number of fish in a lake is 2,200 now. It decreases by 5% each year. Work out the number of fish in the lake after 3 years, correct to the nearest whole number.

Q16

[4 marks]

The number of bacteria in a culture is 5,000 now. It increases by 4% each year. Work out the number of bacteria in the culture after 3 years, correct to the nearest whole number.

Q17

[3 marks]

The value of a car is £7,000 now. It decreases by 10% each year. Work out the value of the car after 2 years, correct to the nearest penny.

Q18

[4 marks]

The value of a rare stamp collection is £3,800 now. It increases by 3% each year. Work out the value of the rare stamp collection after 2 years, correct to the nearest penny.

Q19

[3 marks]

The value of a car is £16,100 now. It decreases by 10% each year. Work out the value of the car after 2 years, correct to the nearest penny.

Q20

[3 marks]

The value of a car is £4,200 now. It decreases by 5% each year. Work out the value of the car after 3 years, correct to the nearest penny.

Q21

[5 marks]

The population of a town is 27,810. It grows by 10% per year for 1 year, then grows by 5% per year for 1 more year. Find its final value, correct to the nearest whole number.

Q22

[4 marks]

Amy invests £3,500 for 4 years at 2% per year COMPOUND interest.
Ben invests £3,500 for 4 years at 2.5% per year SIMPLE interest.
Who has more money at the end of the 4 years, and by how much?

Q23

[5 marks]

The value of a rare stamp collection is £5,730. It grows by 6% per year for 2 years, then grows by 8% per year for 1 more year. Find its final value, correct to the nearest penny.

Q24

[5 marks]

The number of members of a gym is 250. It grows by 4% per year for 1 year, then grows by 3% per year for 2 more years. Find its final value, correct to the nearest whole number.

Q25

[5 marks]

The population of a town is 37,820. It grows by 6% per year for 2 years, then decreases by 6% per year for 1 more year. Find its final value, correct to the nearest whole number.

Q26

[4 marks]

Priya invests £5,500 for 2 years at 4% per year COMPOUND interest.
Tom invests £5,500 for 2 years at 5% per year SIMPLE interest.
Who has more money at the end of the 2 years, and by how much?

Q27

[5 marks]

The number of bacteria in a culture is 14,230. It grows by 6% per year for 2 years, then decreases by 4% per year for 1 more year. Find its final value, correct to the nearest whole number.

Q28

[5 marks]

The number of members of a gym is 1,960. It grows by 4% per year for 1 year, then grows by 6% per year for 2 more years. Find its final value, correct to the nearest whole number.

Q29

[5 marks]

The number of members of a gym is 1,050. It grows by 6% per year for 2 years, then decreases by 5% per year for 1 more year. Find its final value, correct to the nearest whole number.

Q30

[4 marks]

Zara invests £4,000 for 2 years at 4% per year COMPOUND interest.
Leo invests £4,000 for 2 years at 5% per year SIMPLE interest.
Who has more money at the end of the 2 years, and by how much?