



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

✓ £24,226.40

Q1 · ● Developing · 3 marks

METHOD

Multiplier = 0.88

$$27530 \times 0.88 = £24,226.40$$

✓ 1.06

Q2 · ● Developing · 2 marks

METHOD

$$100 + 6 = 106$$

$$\text{Multiplier} = 106 \div 100 = 1.06$$

✓ £4,690.40

Q3 · ● Developing · 3 marks

METHOD

Multiplier = 1.04

$$4510 \times 1.04 = £4,690.40$$

✓ 48,480

Q4 · ● Developing · 3 marks

METHOD

Multiplier = 1.2

$$40400 \times 1.2 = 48,480$$

✓ 0.94

Q5 · ● Developing · 2 marks

METHOD

$$100 - 6 = 94$$

$$\text{Multiplier} = 94 \div 100 = 0.94$$

✓0.8

Q6 · ● Developing · 2 marks

METHOD

$$100 - 20 = 80$$

$$\text{Multiplier} = 80 \div 100 = 0.8$$

✓11,749

Q7 · ● Developing · 3 marks

METHOD

$$\text{Multiplier} = 1.12$$

$$10490 \times 1.12 = 11,749$$

✓0.98

Q8 · ● Developing · 2 marks

METHOD

$$100 - 2 = 98$$

$$\text{Multiplier} = 98 \div 100 = 0.98$$

✓0.97

Q9 · ● Developing · 2 marks

METHOD

$$100 - 3 = 97$$

$$\text{Multiplier} = 97 \div 100 = 0.97$$

✓£9,457.60

Q10 · ● Developing · 3 marks

METHOD

$$\text{Multiplier} = 0.92$$

$$10280 \times 0.92 = £9,457.60$$

✓ £1,297.92

Q11 · ● Secure · 4 marks

METHOD

Multiplier = 1.04

$$1200 \times 1.04^2 = £1,297.92$$

✓ £5,785.60

Q12 · ● Secure · 3 marks

METHOD

Multiplier = $1 - 20/100 = 0.8$

$$11300 \times 0.8^3 = £5,785.60$$

✓ 5,826

Q13 · ● Secure · 4 marks

METHOD

Multiplier = 1.02

$$5600 \times 1.02^2 = 5,826$$

✓ £5,038.85

Q14 · ● Secure · 4 marks

METHOD

Multiplier = 1.08

$$4000 \times 1.08^3 = £5,038.85$$

✓ 1,886

Q15 · ● Secure · 3 marks

METHOD

Multiplier = $1 - 5/100 = 0.95$

$$2200 \times 0.95^3 = 1,886$$

✓5,624

Q16 · ● Secure · 4 marks

METHOD

Multiplier = 1.04

$$5000 \times 1.04^3 = 5,624$$

✓£5,670.00

Q17 · ● Secure · 3 marks

METHOD

Multiplier = $1 - 10/100 = 0.9$

$$7000 \times 0.9^2 = £5,670.00$$

✓£4,031.42

Q18 · ● Secure · 4 marks

METHOD

Multiplier = 1.03

$$3800 \times 1.03^2 = £4,031.42$$

✓£13,041.00

Q19 · ● Secure · 3 marks

METHOD

Multiplier = $1 - 10/100 = 0.9$

$$16100 \times 0.9^2 = £13,041.00$$

✓£3,600.98

Q20 · ● Secure · 3 marks

METHOD

Multiplier = $1 - 5/100 = 0.95$

$$4200 \times 0.95^3 = £3,600.98$$

✓32,121

Q21 · ● Greater Depth · 5 marks

METHOD

Multipliers: 1.1 and 1.05

$$27810 \times 1.1 \times 1.05 = 32,121$$

✓Ben, by £61.49

Q22 · ● Greater Depth · 4 marks

METHOD

$$\text{Amy: } £3,500 \times 1.02^4 = £3,788.51$$

Ben: interest each year = 2.5% of £3,500 = £87.50; $£3,500 + 4 \times £87.50 = £3,850.00$

Difference = £61.49, so Ben has more.

✓£6,953.29

Q23 · ● Greater Depth · 5 marks

METHOD

Multipliers: 1.06 and 1.08

$$5730 \times 1.06^2 \times 1.08 = £6,953.29$$

✓276

Q24 · ● Greater Depth · 5 marks

METHOD

Multipliers: 1.04 and 1.03

$$250 \times 1.04 \times 1.03^2 = 276$$

✓39,945

Q25 · ● Greater Depth · 5 marks

METHOD

Multipliers: 1.06 and 0.94

$$37820 \times 1.06^2 \times 0.94 = 39,945$$

✓ Tom, by £101.20

Q26 · ● Greater Depth · 4 marks

METHOD

Priya: $£5,500 \times 1.04^2 = £5,948.80$

Tom: interest each year = 5% of $£5,500 = £275.00$; $£5,500 + 2 \times £275.00 = £6,050.00$

Difference = $£101.20$, so Tom has more.

✓ 15,349

Q27 · ● Greater Depth · 5 marks

METHOD

Multipliers: 1.06 and 0.96

$$14230 \times 1.06^2 \times 0.96 = 15,349$$

✓ 2,290

Q28 · ● Greater Depth · 5 marks

METHOD

Multipliers: 1.04 and 1.06

$$1960 \times 1.04 \times 1.06^2 = 2,290$$

✓ 1,121

Q29 · ● Greater Depth · 5 marks

METHOD

Multipliers: 1.06 and 0.95

$$1050 \times 1.06^2 \times 0.95 = 1,121$$

✓ Leo, by £73.60

Q30 · ● Greater Depth · 4 marks

METHOD

Zara: $£4,000 \times 1.04^2 = £4,326.40$

Leo: interest each year = 5% of $£4,000 = £200.00$; $£4,000 + 2 \times £200.00 = £4,400.00$

Difference = $£73.60$, so Leo has more.