



ACHIEVE ACADEMY

GCSE Maths — Foundation Tier

Standard Form · 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.

Standard Form

Total marks available: 80

● Standard Form

✓2,000

Q1 · ● Developing · 2 marks

METHOD

$$2.0 \times 10^3 = 2,000$$

✓0.00098

Q2 · ● Developing · 2 marks

METHOD

$$9.8 \times 10^{-4} = 0.00098$$

✓ 5.5×10^7

Q3 · ● Developing · 2 marks

METHOD

Move the decimal point so $1 \leq \text{number} < 10$: $55,000,000 = 5.5 \times 10^7$

✓ 5.9×10^5

Q4 · ● Developing · 2 marks

METHOD

Move the decimal point so $1 \leq \text{number} < 10$: $590,000 = 5.9 \times 10^5$

✓6,100

Q5 · ● Developing · 2 marks

METHOD

$$6.1 \times 10^3 = 6,100$$

✓ 2.5×10^{-5}

Q6 · ● Developing · 2 marks

METHOD

Move the decimal point so $1 \leq \text{number} < 10$: $0.000025 = 2.5 \times 10^{-5}$

✓0.011

Q7 · ● Developing · 2 marks

METHOD

$$1.1 \times 10^{-2} = 0.011$$

✓1,300

Q8 · ● Developing · 2 marks

METHOD

$$1.3 \times 10^3 = 1,300$$

✓ 1.8×10^{-2}

Q9 · ● Developing · 2 marks

METHOD

Move the decimal point so $1 \leq \text{number} < 10$: $0.018 = 1.8 \times 10^{-2}$

✓0.016

Q10 · ● Developing · 2 marks

METHOD

$$1.6 \times 10^{-2} = 0.016$$

✓ 9.1×10^5

Q11 · ● Secure · 3 marks

METHOD

Divide the numbers: $3.64 \div 4 = 0.91$

Subtract the powers: $9 - 3 = 6$

$$0.91 \times 10^6 = 9.1 \times 10^5$$

✓ 2.1×10^3

Q12 · ● Secure · 3 marks

METHOD

Divide the numbers: $6.3 \div 3 = 2.1$

Subtract the powers: $4 - 1 = 3$

✓ 6.44×10^9

Q13 · ● Secure · 3 marks

METHOD

Multiply coefficients: $2.3 \times 2.8 = 6.44$

Add indices: $4 + 5 = 9$

✓ 1.175×10^{10}

Q14 · ● Secure · 3 marks

METHOD

Multiply coefficients: $2.5 \times 4.7 = 11.75$

Add indices: $5 + 4 = 9$

$11.75 \times 10^9 = 1.175 \times 10^{10}$

✓ 6.4×10^7

Q15 · ● Secure · 3 marks

METHOD

Multiply coefficients: $2 \times 3.2 = 6.4$

Add indices: $4 + 3 = 7$

✓ 1.443×10^{10}

Q16 · ● Secure · 3 marks

METHOD

Multiply coefficients: $3.9 \times 3.7 = 14.43$

Add indices: $7 + 2 = 9$

$14.43 \times 10^9 = 1.443 \times 10^{10}$

✓ 5.2×10^3

Q17 · ● Secure · 3 marks

METHOD

Divide the numbers: $1.04 \div 2 = 0.52$

Subtract the powers: $5 - 1 = 4$

$0.52 \times 10^4 = 5.2 \times 10^3$

$$\checkmark 2.8 \times 10^3$$

Q18 · ● Secure · 3 marks

METHOD

Divide the numbers: $1.12 \div 4 = 0.28$

Subtract the powers: $5 - 1 = 4$

$$0.28 \times 10^4 = 2.8 \times 10^3$$

$$\checkmark 5.92 \times 10^6$$

Q19 · ● Secure · 3 marks

METHOD

Multiply coefficients: $3.7 \times 1.6 = 5.92$

Add indices: $3 + 3 = 6$

$$\checkmark 7 \times 10^{11}$$

Q20 · ● Secure · 3 marks

METHOD

Multiply coefficients: $2.8 \times 2.5 = 7$

Add indices: $7 + 4 = 11$

$$\checkmark 4.78 \times 10^7$$

Q21 · ● Greater Depth · 3 marks

METHOD

As ordinary numbers: $51,000,000 - 3,200,000 = 47,800,000$
 $= 4.78 \times 10^7$

$$\checkmark 6.1 \times 10^8$$

Q22 · ● Greater Depth · 3 marks

METHOD

Same power of 10, so combine coefficients directly: $3.9 + 2.2 = 6.1$

$$\checkmark 8.3 \times 10^8$$

Q23 · ● Greater Depth · 3 marks

METHOD

Same power of 10, so combine coefficients directly: $5.7 + 2.6 = 8.3$

$$\checkmark 7.86 \times 10^5$$

Q24 · ● Greater Depth · 3 marks

METHOD

As ordinary numbers: $750,000 + 36,000 = 786,000$
 $= 7.86 \times 10^5$

$$\checkmark 1.35 \times 10^9 \text{ km}$$

Q25 · ● Greater Depth · 3 marks

METHOD

Multiply the numbers: $3 \times 4.5 = 13.5$
Add the powers: $5 + 3 = 8$
 $13.5 \times 10^8 = 1.35 \times 10^9$

$$\checkmark 2.8 \times 10^6$$

Q26 · ● Greater Depth · 3 marks

METHOD

Same power of 10, so combine coefficients directly: $5.6 - 2.8 = 2.8$

$$\checkmark 1.2 \times 10^8 \text{ km}$$

Q27 · ● Greater Depth · 3 marks

METHOD

Multiply the numbers: $3 \times 4 = 12$
Add the powers: $5 + 2 = 7$
 $12 \times 10^7 = 1.2 \times 10^8$

$$\checkmark 5 \times 10^2$$

Q28 · ● Greater Depth · 3 marks

METHOD

Same power of 10, so combine coefficients directly: $3.5 - 3 = 0.5$

$$0.5 \times 10^3 = 5 \times 10^2$$

$$\checkmark 2.5 \times 10^8$$

Q29 · ● Greater Depth · 3 marks

METHOD

Same power of 10, so combine coefficients directly: $4.6 - 2.1 = 2.5$

$$\checkmark 2.28 \times 10^{-4} \text{ g}$$

Q30 · ● Greater Depth · 3 marks

METHOD

Multiply the numbers: $7.6 \times 3 = 22.8$

Add the powers: $-9 + 4 = -5$

$$22.8 \times 10^{-5} = 2.28 \times 10^{-4}$$