



THIRD SPACE  
LEARNING

# Mathematics

## Paper 3

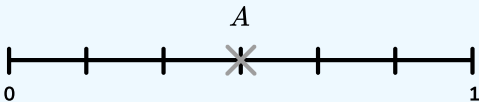
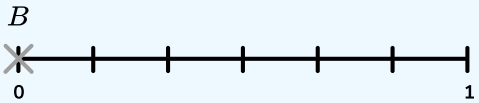
### (Calculator)

## Foundation Tier

## Mark Scheme

OCR GCSE

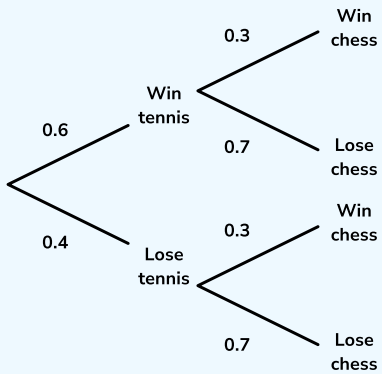
SET 1A

Question	Working	Answer	Notes																
Q1a			A1 cao																
Q1b			A1 cao																
Q1c	$\frac{1}{6} + \frac{1}{6} = \frac{2}{6}$		M1 $\frac{1}{6} + \frac{1}{6} = \frac{2}{6}$ A1 cao																
Q2a		Tangent	B1 cao																
Q2b		Sector	B1 cao																
Q3a		$\frac{8}{10}$	B1 cao																
Q3b		0.625	A1 cao																
Q4a		2	B1 cao																
Q4b	<table border="1"> <thead> <tr> <th></th><th>Exactly two lines of symmetry</th><th>All sides equal</th><th>Opposite angles equal</th></tr> </thead> <tbody> <tr> <td>Square</td><td>✗</td><td>✓</td><td>✓</td></tr> <tr> <td>Rhombus</td><td>✓</td><td>✓</td><td>✓</td></tr> <tr> <td>Trapezium</td><td>✗</td><td>✗</td><td>✗</td></tr> </tbody> </table>		Exactly two lines of symmetry	All sides equal	Opposite angles equal	Square	✗	✓	✓	Rhombus	✓	✓	✓	Trapezium	✗	✗	✗		A1 At least 3 correct A1 For 4 or 5 correct A1 All 6 correct
	Exactly two lines of symmetry	All sides equal	Opposite angles equal																
Square	✗	✓	✓																
Rhombus	✓	✓	✓																
Trapezium	✗	✗	✗																
Q5a		3	B1 cao																
Q5b	1 2 3 3 3 3 4 6 7 7 7 8 9 9 9	6	M1 For putting the values in order of size B1 cao																
Q5c	$9+7+9+6+3+3+9+3+2+3+8+4+1+7+7=81$ $81 \div 15 = 5.4$	5.4	M1 Adding all 15 numbers A1 cao																
Q6		k=3	B1 cao																
Q7ai		19, 22	A1 cao																

Question	Working	Answer	Notes																											
Q7aii		85, 79	A1 cao																											
Q7aiii		6a+10b, 7a+12b	A1 cao																											
Q7b	4×50 + 10 = 210	210	M1 Substituting 50 into 4n+10 A1 cao																											
Q8a		-5	A1 cao																											
Q8b		$\frac{4}{7}$	A1 cao																											
Q8c	$\frac{2}{5} \times \frac{3}{4} = \frac{6}{20}$	$\frac{6}{20}$	M1 $\frac{2}{5} \times \frac{3}{4}$ seen A1 $\frac{6}{20}$ oe																											
Q9a	<table><tr><th>Coin 1</th><th>Coin 2</th><th>Coin 3</th></tr><tr><td>H</td><td>H</td><td>H</td></tr><tr><td>H</td><td>H</td><td>T</td></tr><tr><td>H</td><td>T</td><td>H</td></tr><tr><td>H</td><td>T</td><td>T</td></tr><tr><td>T</td><td>T</td><td>T</td></tr><tr><td>T</td><td>T</td><td>H</td></tr><tr><td>T</td><td>H</td><td>T</td></tr><tr><td>T</td><td>H</td><td>H</td></tr></table>	Coin 1	Coin 2	Coin 3	H	H	H	H	H	T	H	T	H	H	T	T	T	T	T	T	T	H	T	H	T	T	H	H		M1 Any 4 correct rows A1 cao
Coin 1	Coin 2	Coin 3																												
H	H	H																												
H	H	T																												
H	T	H																												
H	T	T																												
T	T	T																												
T	T	H																												
T	H	T																												
T	H	H																												
Q9b		$\frac{3}{8}$	M1 3 seen A1 cao																											
Q9c		$\frac{3}{4}$	M1 Numerator 3 or denominator 4 A1 cao																											
Q10a		June	B1 cao																											
Q10b		People go camping in the summer Or the shop was having a sale Or other reasonable explanation	B1																											

Question	Working	Answer	Notes
<b>Q11</b>	$4\%$ of $\pounds 5000 = \pounds 200$ interest per year of $\pounds 200 = \pounds 80$ $\pounds 200 - \pounds 80 = \pounds 120$ $\pounds 120$ in ratio $3:5 = \pounds 45:\pounds 75$ $\pounds 45 \times 3 = \pounds 135$	$\pounds 135$	M1 $4\%$ of $\pounds 5000 = \pounds 200$ M1 Subtracting $\frac{2}{5}$ of 200 from 200 M1 Dividing in ratio $3:5$ A1 cao
<b>Q12a</b>	$11.4 + 17.08 + 9.76 = 38.24\text{cm}$	$38.24\text{cm}$	M1 Adding three decimals A1 cao
<b>Q12b</b>	$11.04 \div 4 = 2.76\text{cm}$	$2.76\text{cm}$	M1 Attempting to divide 11.04 by 4 A1 cao
<b>Q13a</b>		$18ab$	B1 cao
<b>Q13b</b>		$5d$	B1 cao
<b>Q13c</b>	$x + 5xy + 2xy + 4y$ $= x + 7xy + 4y$	$x^2 + 7xy + 4y$	M1 Correctly expanding both brackets A1 cao
<b>Q14a</b>		12	M1 Factors of 60 listed A1 cao
<b>Q14b</b>	9, 18, 27, 36, 45, 54, .... 15, 30, 45, ....	45	A1 cao
<b>Q15a</b>	$30 \div 12 = 2.5$ $120 \times 2.5 = 300\text{g}$ butter $150 \times 2.5 = 375\text{g}$ sugar $2 \times 2.5 = 5$ eggs $160 \times 2.5 = 400\text{g}$ flour	No she does not have enough flour	M1 2.5 seen M1 At least 2 quantities correctly calculated A1 No with a correct explanation
<b>Q15bi</b>		120:150	A1 cao

Question	Working	Answer	Notes
Q15bii		1:1.25	M1 Any correct simplification of the ratio A1 cao
Q16a		0.1640625	A1 cao
Q16b		0.16	A1 cao
Q17a		(1, -4)	M1 one coordinate correct A1 cao
Q17b		-3	B1 cao
Q18	$201 - 180 = 21$ $\frac{21}{180} \times 100 = 11.6666\dots$	11.7%	M1 £21 seen A1 $\frac{21}{180} \times 100 = 11.6666\dots$ A1 Answer correctly rounded
Q19a		$(x - 3)(x - 4)$	M1 Two brackets of form $(x \dots m)(x \dots n)$ where $mn = -12$ A1 cao
Q19b	$10^2 - 7 \times 10 + 12 = 100 - 70 + 12 = 42$ Or $(10 - 3)(10 - 4) = 7 \times 6 = 42$	42	M1 Substituting 10 into $x^2 - 7x + 12$ or $(x-3)(x-4)$ A1 cao
Q20a	Area of triangle: $\frac{1}{2} \times 4 \times 1.8 = 3.6$ Volume: $13.6 \times 12 = 43.2\text{cm}^3$		M1 Attempting to calculate area of triangle M1 Multiplying their area by 12 A1 All steps correct
Q20b	Density: $\frac{34.56}{43.2} = 0.8\text{g/cm}^3$	$0.8\text{g/cm}^3$	M1 $\frac{34.56}{43.2}$ A1 cao

Question	Working	Answer	Notes
Q21a			M1 0.4 seen for lose tennis A1 cao
Q21b	$P(W+L) = 0.6 \times 0.7 = 0.42$ $P(L+W) = 0.4 \times 0.3 = 0.12$ $0.42 + 0.12 = 0.54$	0.54	M1 Attempt to calculate two separate probabilities A1 cao
Q22	$10(x + 5) = 5(4x - 3)$ $10x + 50 = 20x - 15$ $65 = 10x$ $x = 6.5$ $10(6.5 + 5) = 115$ $360 - 115 - 115 - 50 = 80^\circ$	$80^\circ$	M1 Setting $10(x+5)$ equal to $5(4x-3)$ M1 Correctly expanding brackets M1 Moving all terms in x to one side M1 Solving equation M1 Finding the size of the two equal angles A1 cao
Q23	$c = kh$ $320 = k \times 4$ $k = 80$ $c = 80 \times 7 = \text{£}560$	Yes	M1 dividing 320 by 4 M1 $80 \times 7 = \text{£}560$ A1 Yes

Question	Working	Answer	Notes
<b>Q24</b>	$10a + 15b = 105$ , $9a - 15b = -48$ $19a = 57a \Rightarrow 3$ $2 \times 3 + 3b = 21$ $3b = 15b \Rightarrow 5$  Or  $6a + 9b = 63$ , $6a - 10b = -32$ $19b = 95 \Rightarrow b = 5$ $2a + 3 \times 5 = 21$ $2a = 6a \Rightarrow 3$	$a = 3$ $b = 5$	M1 Attempting to convert both equations so that the coefficients of a or b are the same M1 Eliminating either a or b A1 cao
<b>Q25a</b>		The initial number of trees	B1 cao
<b>Q25b</b>		10%	B1 cao
<b>Q25c</b>	1 year: 22500 2 years: 20250 3 years: 18225 4 years: 16402.5 5 years: 14762.25 6 years: 13286.025 7 years: 11957.4225	7 years	M1 Correctly calculating number of trees for 7 years and one other year A1 cao
<b>Q25d</b>		A	B1 cao

Question	Working	Answer	Notes
<b>Q26</b>	Volume of box A: $15 \times 7 \times 8 = 840\text{cm}^3$ $x \times 6 \times 14 = 840, x = 10\text{cm}$ Length of box B=10cm $(2 \times 10 \times 14) + (2 \times 6 \times 14) + (2 \times 6 \times 10)$ $= 568$	$568\text{cm}^2$	M1 Calculating volume of box A M1 Using volume of box B=their volume for box A A1 Length of box B=10cm M1 Finding the area of each face and adding A1 cao



# Help ease the pressure with a personalised revision programme for each of your target KS4 students

Our one to one GCSE revision programme is designed to help your target students reach their potential in their GCSE maths exams.

Our specialist maths tutors work one to one with each student, focusing on securing core KS4 content and building familiarity with the kinds of questions they'll be tackling in their GCSE exams.

Get in touch today:

✉ [hello@thirdspacelearning.com](mailto:hello@thirdspacelearning.com)

🔍 [thirdspacelearning.com](https://thirdspacelearning.com)

☎ 0203 771 0095