



THIRD SPACE
LEARNING

Mathematics

Paper 1

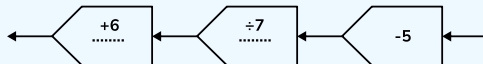
(Calculator)

Foundation Tier

Mark Scheme

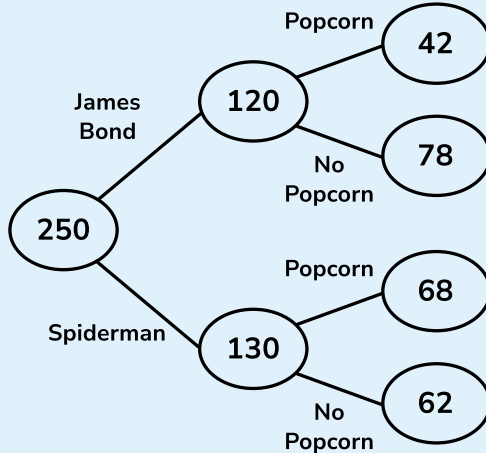
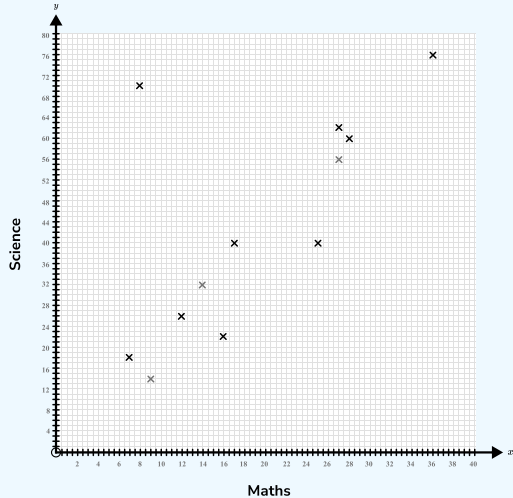
OCR GCSE

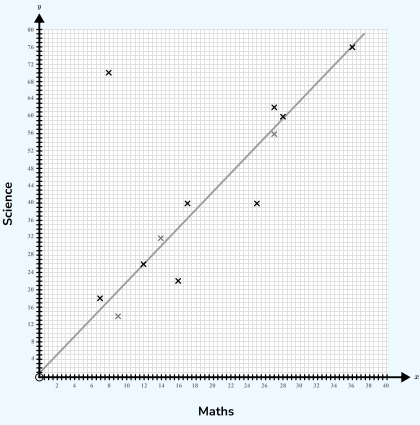
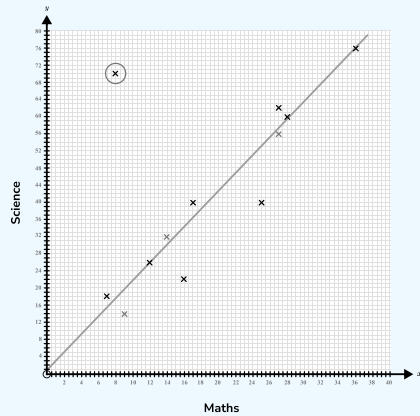
SET 1A

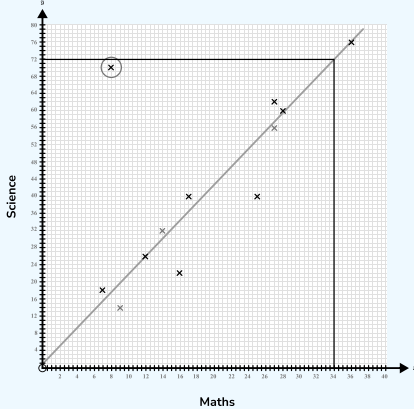
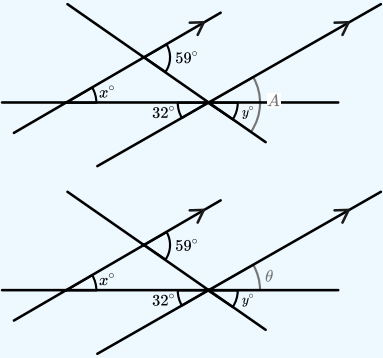
Question	Working	Answer	Notes															
Q1a		360	B1 cao															
Q1b		42	B1 cao															
Q1c		126.6	B1 cao															
Q2a		12	B1 cao															
Q2b		5 and 11	B1 5 B1 11															
Q2c		1 - 15 = - 14	M1 1 or 15 correctly placed A1 cao															
Q2d		Lily is correct as every other even number has 2 as a factor	B1 Lily is correct B1 A correct reason															
Q3	<table><tr><td></td><td>Regular/irregular</td><td>Name of polygon</td></tr><tr><td>A</td><td>Irregular</td><td>Pentagon</td></tr><tr><td>B</td><td>Regular</td><td>Octagon</td></tr><tr><td>C</td><td>Irregular</td><td>Hexagon</td></tr><tr><td>D</td><td>Regular</td><td>Hexagon</td></tr></table>		Regular/irregular	Name of polygon	A	Irregular	Pentagon	B	Regular	Octagon	C	Irregular	Hexagon	D	Regular	Hexagon		A1 cao A1 cao A1 cao A1 cao
	Regular/irregular	Name of polygon																
A	Irregular	Pentagon																
B	Regular	Octagon																
C	Irregular	Hexagon																
D	Regular	Hexagon																
Q4	$6 \times 9 = 54$ $648 \div 54 = 12$	12	M1 $6 \times 9 = 54$ or $648 \div 54 = 12$ seen A1 cao															
Q5a		Multiply by 2	B1 oe															
Q5b	$24 \div 2 = 12$ $12 - 5 = 7$	7	M1 for 12 A1 7															
Q5c			B1 $\div 7$ B1 + 6															
Q6a	$5 + 3 + 6.5 + 3.5 = 18$ $18 \times 10 = \text{£}180$	£180	M1 18 hours worked A1 cao															

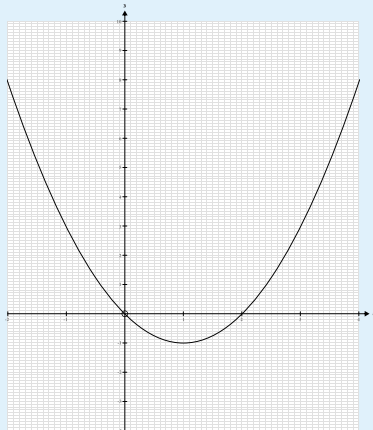
Question	Working	Answer	Notes
Q6b	$32\% \text{ of } £200 = £64$ $\frac{3}{16} \text{ of } £200 = £37.50$ $£200 - 64 - 37.50 = £98.50$	No	M1 £64 seen M1 £37.50 seen A1 No and correct argument
Q7a		Faces 5 Edges 9 Vertices 6	B1 B1 B1
Q7b		Pentagonal prism 10 Octagonal prism 16	B1 cao B1 cao
Q7c		The number of vertices is double the number of sides of the end face	B1 A correct rule - double
Q8a		$(60 - 12) \div 6 - 4 = 4$	B1 cao
Q8b		$3 \times (4 + 2)^2 - 4 = 104$	B1 cao
Q9a		$4a + 9b$	A1 cao
Q9b	$4p + 28 = 42$ $4p = 14$ $p = 3.5$	$p = 3.5$	M1 Correctly expanding brackets A1 cao
Q9c		$3x(2x - 3)$	M1 Any correct factorisation A1 cao
Q10	$\frac{3}{4} = 0.75, \frac{4}{5} = 0.8$	$72\%, \frac{3}{4}, 0.77, \frac{4}{5}$	M1 Attempting to convert all values to the same form A1 cao

Question	Working	Answer	Notes
Q11	$5 + 2 = 7$, $35 \div 7 = 5$ $5 \times 5 = 25$ apples, $5 \times 2 = 10$ oranges $25 \times 30p = 750p$, $10 \times 40 = 400p$ $750p + 400p = 1150p$	£11.50	M1 Dividing 35 by 7 M1 Correctly finding the number of oranges and the number of apples M1 750p or £7.50 and 400p or £4 seen A1 cao
Q12	$30 \times 15 = 450$ $\pi \times 3^2 = 28.27433$ $4 \times 28.27433 = 113.09733$ $450 - 113.09733 = 336.90266$	337cm^2	M1 Area of rectangle correct M1 Area of 1 circle correctly calculated M1 Subtracting area of 4 circles from area of rectangle A1 cao
Q13a		4.72×10^6	A1 cao
Q13b		0.0071	A1 cao
Q14a		The frequency starts from 55 so only the tops of the bars are shown	M1 for 11 or 3.2 A1 oe
Q14b		Not enough information	B1 cao
Q15	$\frac{11}{3.2}$	3.4375	B2 cao
Q16	$6y - 12 < 2y + 10$ $4y < 22$ $y < 5.5$	$y < 5.5$	M1 Correctly multiplying out brackets on one left-hand side M1 Moving all terms in y to one side A1 cao
Q17a		$\begin{pmatrix} 12 \\ -16 \end{pmatrix}$	A1 cao

Question	Working	Answer	Notes
Q17b	$\begin{pmatrix} 3 \\ -4 \end{pmatrix} - 2\begin{pmatrix} -2 \\ -7 \end{pmatrix} = \begin{pmatrix} 3 - -4 \\ -4 - -14 \end{pmatrix} = \begin{pmatrix} 7 \\ 10 \end{pmatrix}$	$\begin{pmatrix} 7 \\ 10 \end{pmatrix}$	M1 Correctly calculating 2b A1 cao
Q18a	35% of 120 = 42	 <pre> graph LR JB((James Bond)) --- N1(()) N1 --- P1((Popcorn)) N1 --- NP1((No Popcorn)) P1 --- J120((120)) NP1 --- J78((78)) S((Spiderman)) --- N2(()) N2 --- P2((Popcorn)) N2 --- NP2((No Popcorn)) P2 --- S130((130)) NP2 --- S62((62)) </pre>	M1 120 and 130 correct M1 42 correct A1 cao
Q18b		$\frac{68}{130}$ or $\frac{34}{65}$	A1 oe
Q19a			M1 One point plotted correctly A1 All three points correct

Question	Working	Answer	Notes
Q19bi	 <p>A scatter plot on a grid with 'Maths' on the x-axis (0 to 40) and 'Science' on the y-axis (0 to 80). There are 15 data points represented by 'x' marks. A straight line of best fit is drawn starting from the origin (0,0) and passing through approximately (40, 75). The points are roughly as follows: (5, 20), (8, 15), (10, 70), (12, 25), (15, 40), (18, 30), (22, 45), (25, 40), (28, 55), (30, 60), (35, 75).</p>		A1 Appropriate line of best fit
Q19bii	 <p>A scatter plot on a grid with 'Maths' on the x-axis (0 to 40) and 'Science' on the y-axis (0 to 80). There are 15 data points represented by 'x' marks. A straight line of best fit is drawn starting from the origin (0,0) and passing through approximately (40, 75). One point at approximately (8, 70) is circled. The points are roughly as follows: (5, 20), (8, 70), (10, 15), (12, 25), (15, 40), (18, 30), (22, 45), (25, 40), (28, 55), (30, 60), (35, 75).</p>		A1 Correct point selected
Q19ci		Positive	B1 cao
Q19cii		The higher the maths score, the higher the science score	B1 Correct relationship

Question	Working	Answer	Notes
Q19d		72	<p>M1 Evidence that they have used their graph for the estimate e.g. line drawn at 34 for maths</p> <p>A1 Accept 70, 71, 72, 73 or 74</p>
Q20ai		32	A1 cao
Q20aia		Alternate angles are equal	C1 correct reason
Q20b	 <p>Angle A is 59° - corresponding angles are equal</p> <p>Angle B is 32° - opposite angles are equal</p> <p>Angle $y = 59 - 32 = 27^\circ$</p>	27	<p>M1 Angle 'A' is 59°</p> <p>A1 cao</p>

Question	Working	Answer	Notes																
Q21a	<table><tr><td>x</td><td>-2</td><td>-1</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>y</td><td>8</td><td>3</td><td>0</td><td>-1</td><td>0</td><td>3</td><td>8</td></tr></table>	x	-2	-1	0	1	2	3	4	y	8	3	0	-1	0	3	8	3, -1, 0	M1 at least 2 values correct A1 cao
x	-2	-1	0	1	2	3	4												
y	8	3	0	-1	0	3	8												
Q21b			M1 Points plotted followed through from their table. Allow one error in plotting A1 Fully correct curve																
Q21c		$x=0$ and $x=2$	A1 cao A1 cao																
Q22a	10% of 1200=120 20% of 1200=240 £1200-240=£960	£960	M1 20% of 1200 = 240 or 1200×0.8 seen A1 cao																
Q22b	£560=80% £70=10% £700=100%	£700	M1 £560=80% seen A1 cao																

Question	Working	Answer	Notes
Q23	Volume of sphere: $\frac{4}{3} \times \pi \times 12^3 = 7238.229\text{cm}^3$ Volume of pyramid: $\frac{1}{3} \times 20 \times 20 \times 30 = 4000\text{cm}^3$	Sphere	M1 12 substituted into formula for volume of a sphere M1 Correct volume for sphere M1 20 and 30 substituted into formula for volume of pyramid M1 Correct volume for pyramid A1 Both volumes correct and sphere stated
Q24a		29.5m	A1 cao
Q24b		$345 \leq \text{mass} < 355$	A1 345 A1 355
Q25	Volume of cylinder: $\pi \times 30^2 \times 160 = 452389.3421\text{cm}^3$ $452389.3421 \div 1000 = 452.3893421$ litres $452.3893421 \div 12 = 37.69911184$	37.7 minutes	M1 30 and 160 substituted into formula for volume of a cylinder or area of cross-section= $\pi \times 30^2$ seen M1 Volume of cylinder correct M1 Dividing by 1000 to convert to litres M1 Dividing by 12 to find time 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

🔍 thirdspacelearning.com

☎ 0203 771 0095