



Mathematics

Paper 1

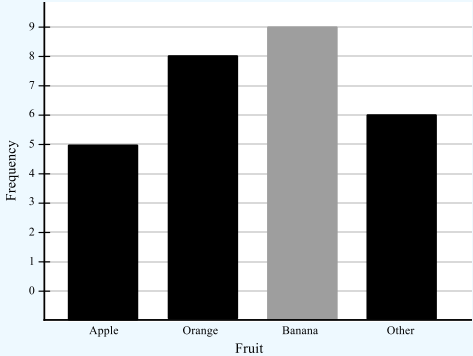
(Calculator)

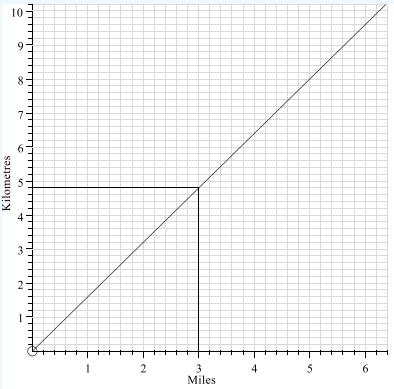
Foundation Tier

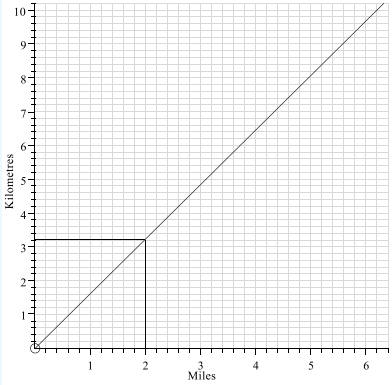
Mark Scheme

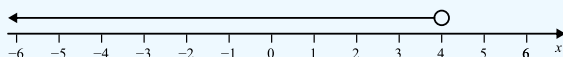
OCR GCSE

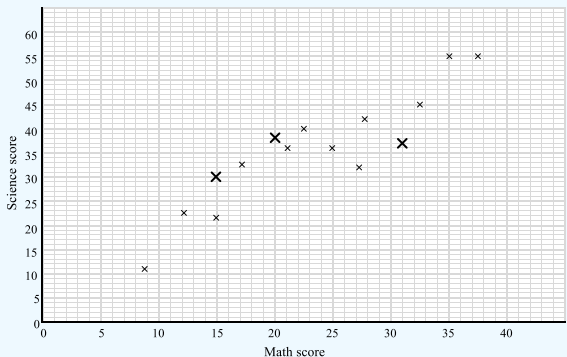
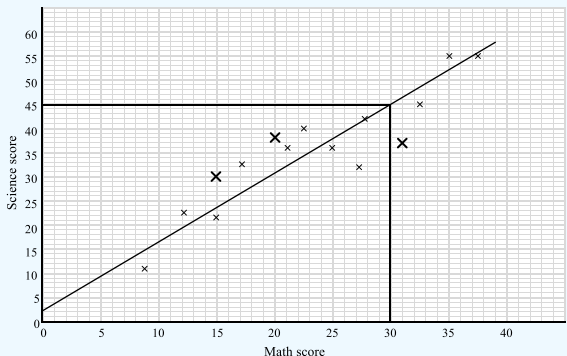
SET 3

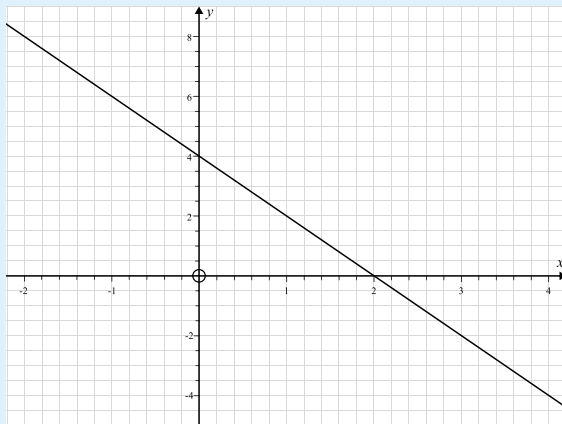
Question	Working	Answer	Notes
Q1a		Hexagon	B1
Q1b		6	B1
Q2a		70	A1
Q2b		0.34, 0.403, 0.43, 4.03, 4.3	A1
Q3a		3.25kg	A1
Q3b		1500g	A1
Q4a		5	B1
Q4b		7	A1
Q5a		8	A1
Q5b		25	A1
Q5c		85 – 23	M1 8 and 2 correctly placed A1 cao
Q6	<div>5 + 8 + 6 = 19</div> <div>28 – 19 = 9</div> <div></div>	9	M1 At least two of 5, 8 and 6 correct M1 <i>ft</i> Their ‘5’, ‘8’ and ‘6’ subtracted from 28 A1 correctly drawn bar

Question	Working	Answer	Notes
Q7a	$11 - 2 = 9$	$p = 9$	A1
Q7b	$30 \div 5 = 6$	$q = 6$	A1
Q8	$10 \times 5 = \text{£}50$ $50 - 18 - 6 - 3 = \text{£}23$	$\text{£}23$	M1 $10 \times 5 = \text{£}50$ or $\text{£}50 - \text{£}23$ seen A1 cao
Q9	p pigs $2p$ sheep $p + 2p = 3p$	$3p$	A1
Q10		3.2	M1 10.24 seen A1 cao
Q11a		$n = 5$	A1
Q11b	$2 + 5 = 7$	$n = 7$	A1
Q12a		It is a straight line that passes through the origin	B1 Straight line B1 Through origin
Q12b		4.8km	B1

Question	Working	Answer	Notes
Q12c  $3.2\text{km} = 2 \text{ miles}$ $6 - 2 = 4 \text{ miles left}$		4 miles	M1 $3.2\text{km} = 2 \text{ miles}$ A1 cao
Q13a		$y = 3x - 2$	M1 $3x$ or -2 seen A1 cao
Q13b	$85 \div 5 = 17$ $17 - 6 = 11$	+11	M1 $85 \div 5 = 17$ or $17 - 6$ seen A1 cao
Q14	$20\% \text{ of } 145 = 29$ $145 - 29 = \text{£}116$ $15\% \text{ of } 130 = 19.50$ $130 - 19.50 = \text{£}110.50$	Shop B	M1 29 and 19.50 or 0.8 and 0.85 M1 $\text{£}116$ and $\text{£}110.50$ A1 Correct conclusion following correct working
Q15	$C = 2 \times 10 + 5 - 3$ $C = 20 - 15 = 5$	$C = 5$	M1 Evidence that 10 and -3 substituted into the expression A1 cao
Q16a		<	B1

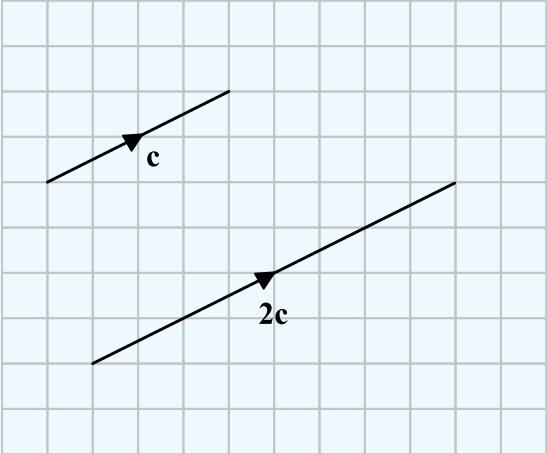
Question	Working	Answer	Notes
Q16b	$\frac{5}{7} = \frac{15}{21}$	$<$	A1
Q16c	$2\frac{1}{4} = \frac{9}{4}$	$=$	A1
Q17	Area trapezium: $\frac{1}{2}(8 + 11) \times 7 = 66.5$ $66.5 \times 2 = 133$ $133 \div 5 = 26.6$	$x = 26.6\text{cm}$	M1 Area trapezium: $\frac{1}{2}(8 + 11) \times 7 (= 66.5)$ M1 $66.5 \times 2 (= 133)$ M1 their '133' $\div 5$ A1 cao
Q18	$250 \div 1.90 = 131.58 \text{ g/£}$ $400 \div 2.20 = 181.82 \text{ g/£}$ $600 \div 3.60 = 166.67 \text{ g/£}$ Or $190 \div 250 = 0.76 \text{ p/g}$ $220 \div 400 = 0.55 \text{ p/g}$ $360 \div 600 = 0.6 \text{ p/g}$	400g	M1 Attempt to divide weight by cost or cost by weight for each container M1 At least 2 correct answers M1 All 3 correct A1 Container B indicated following correct working
Q19a	$3x - 6 < 6$ $3x < 12$ $x < 4$	$x < 4$	M1 $3x - 6 < 6$ or $3x < 12$ seen A1 cao
Q19b			M1 <i>ft</i> correctly represents their answer from i A1 cao

Question	Working	Answer	Notes
Q20a			<p>M1 Two points correctly plotted</p> <p>A1 All three points correctly plotted</p>
Q20b		Positive correlation	B1
Q20c			<p>M1 Appropriate line of best fit drawn</p> <p>A1 44 – 46, from their line of best fit</p>
Q21	$60 \times 4 = 240$ plants 240 in ratio $2:2:1$ $2 + 2 + 1 = 5$, $240 \div 5 = 48$, $2 \times 48 = 96$ $96:96:48$ $96 \times 65 = 6175 = \text{£}62.40$ $96 \times 59 = 5664 = \text{£}56.64$ $48 \times 85 = 4080 = \text{£}40.80$ $62.40 + 56.64 + 40.80 = \text{£}159.84$	$\text{£}159.84$	<p>M1 $60 \times 4 = 240$ plants</p> <p>M1 240 in ratio $2:2:1 = 96:96:48$</p> <p>M1 Attempt to calculate cost of each type of plant</p> <p>M1 Adds their 3 values (£ or pence)</p> <p>A1 cao in £</p>

Question	Working	Answer	Notes																
Q22a	<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>6</td><td>4</td><td>2</td><td>0</td><td>-2</td><td>-4</td></tr></table>	x	-2	-1	0	1	2	3	4	y	8	6	4	2	0	-2	-4		A1 cao
x	-2	-1	0	1	2	3	4												
y	8	6	4	2	0	-2	-4												
Q22b			M1 At least 3 correct points marked on the grid A1 All points correct and joined with a straight line																
Q22c	Gradient: $\frac{2-1}{2-0} = \frac{1}{2}$ Y Intercept: 1	$y = \frac{1}{2}x + 1$	M1 Y intercept = 1 seen or implied M1 Gradient = $\frac{1}{2}$ A1 cao																
Q23	$25 - 9 - 6 = 10$ Pythagoras' theorem $6^2 + 9^2 = 117$ $10^2 = 100$ $117 \neq 100$ so not a right angled triangle	No	M1 $25 - 9 - 6 = 10cm$ M1 Attempt to use Pythagoras theorem A1 Correct answer from correct reasoning																
Q24a		Jess as she has done the most trials	B1																
Q24bi	$20 \div 6 = 3.33...$	Yes - in 20 rolls, we would expect around 3 6s	A1																

Question	Working	Answer	Notes
Q24bii	$1 + 14 + 31 = 46$ $20 + 50 + 200 = 270$ $270 \div 6 = 45$ expected 6s	No - the overall results suggest that the dice is not biased, as we would expect about 45 6s and there were 46	A1
Q25a	$x^2 + 4x - 7x - 28 = x^2 - 3x - 28$	$x^2 - 3x - 28$	M1 $x^2 \pm ax \pm 28$ A1 cao
Q25b		$(x + 3)(x - 3)$	M1 $(x \pm 3)(x \pm 3)$ A1 cao
Q26	$\sin(x) = \frac{7}{14} = \frac{1}{2}$ $x = \sin^{-1}(0.5) = 30^\circ$	30°	M1 $\sin(x) = \frac{7}{14}$ oe seen M1 Attempts $\sin^{-1}(0.5)$ A1 cao
Q27	$12 \times 8 = 96$ machine hours $96 \div 9 = 10\frac{2}{3}$ $\frac{2}{3}$ hours = $\frac{2}{3} \times 60 = 40$ minutes	10 hours 40 minutes	M1 $12 \times 8 = 96$ machine hours M1 $96 \div 9 = 10\frac{2}{3}$ A1 cao

Question	Working	Answer	Notes
Q28	$4m + 3p = 29$ $3m + 2p = 20.5$ $8m + 6p = 58$ $9m + 6p = 61.5$ $m = 3.5$ $4 \times 3.5 + 3p = 29$ $14 + 3p = 29$ $3p = 15$ $p = 5$	$m = \text{£}3.50$ $p = \text{£}5.00$	<p>M1 Two equation in m and p with at least one correct</p> <p>M1 Attempt to rewrite with common coefficients e.g.</p> $8m + 6p = 58$ $9m + 6p = 61.5$ <p>Oe with common coefficients of m or p</p> <p>M1 One equation subtracted from the other resulting in an equation in one variable</p> <p>A1 $m = 3.5$ or $p = 5$</p> <p>A1 $m = 3.5$ and $p = 5$</p>
Q29	$180 - 165 = 15$ $360 \div 15 = 24$	24	<p>M1 $180 - 165 = 15$ or $360 \div 15$</p> <p>A1 cao</p>
Q30a		2.38×10^{-3}	A1
Q30b		271000	A1
Q30c	$54000 - 3700 = 50300 = 5.03 \times 10^4$	5.03×10^4	<p>M1 54000 and 3700 or 50300 or 5.03 seen</p> <p>A1 cao</p>

Question	Working	Answer	Notes
Q31a		$\begin{pmatrix} 3x - 2 \\ 15 - 2y \end{pmatrix}$	M1 Top row or bottom row correct A1 cao
Q31b	$x + 1 = 4, x = 3$ $5 + y = 3, y = -2$	$x = 3, y = -2$	M1 x or y correct A1 cao
Q31c			A1 Twice as long, same gradient, arrow indicating direction

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