



THIRD SPACE
LEARNING

Mathematics

Paper 1

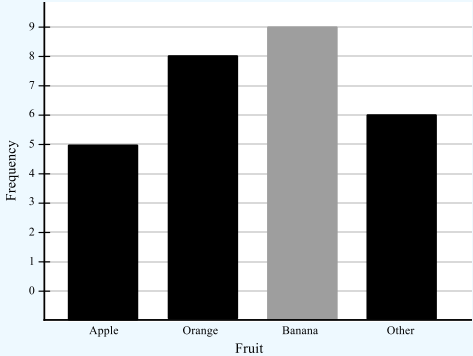
(Calculator)

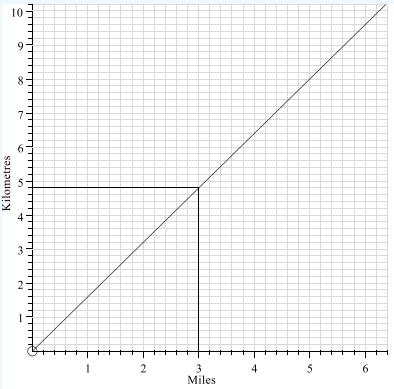
Foundation Tier

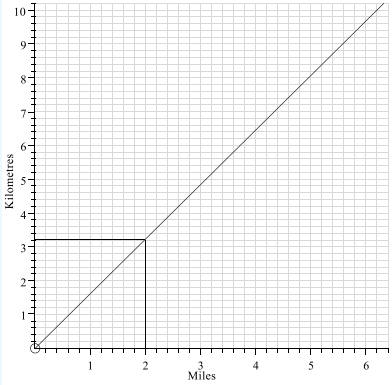
Mark Scheme

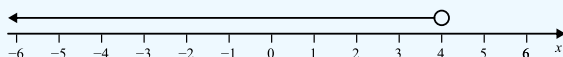
OCR GCSE

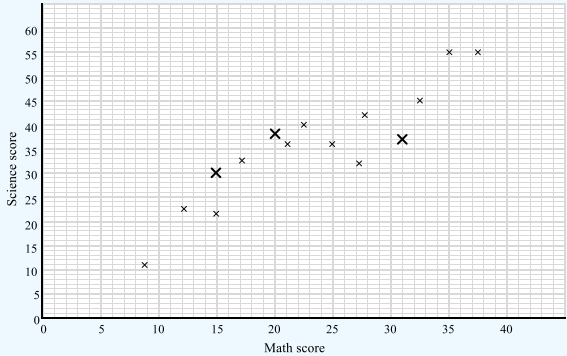
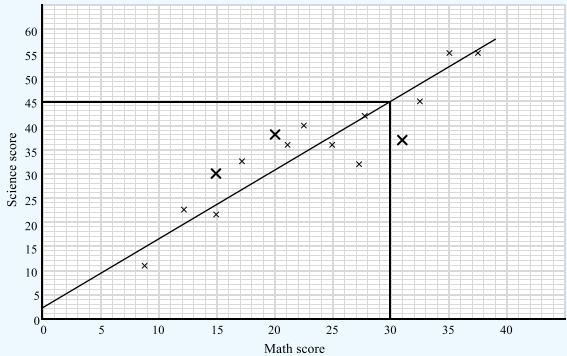
SET 3

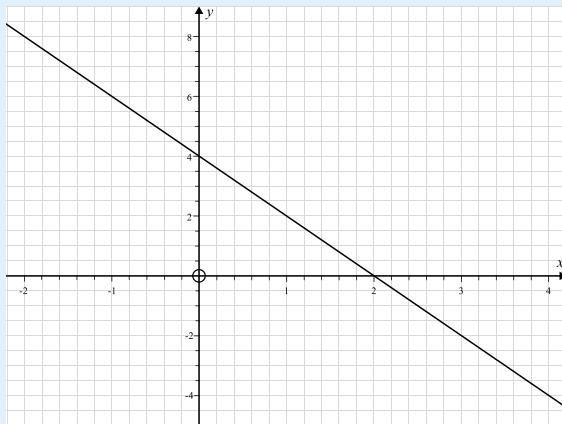
Question	Working	Answer	Notes
Q1a		Hexagon	B1
Q1b		6	B1
Q2a		70	A1
Q2b		0.34, 0.403, 0.43, 4.03, 4.3	A1
Q3a		3.25kg	A1
Q3b		1500g	A1
Q4a		5	B1
Q4b		7	A1
Q5a		8	A1
Q5b		25	A1
Q5c		85 – 23	M1 8 and 2 correctly placed A1 cao
Q6	<div>5 + 8 + 6 = 19</div> <div>28 – 19 = 9</div> <div></div>	9	M1 At least two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

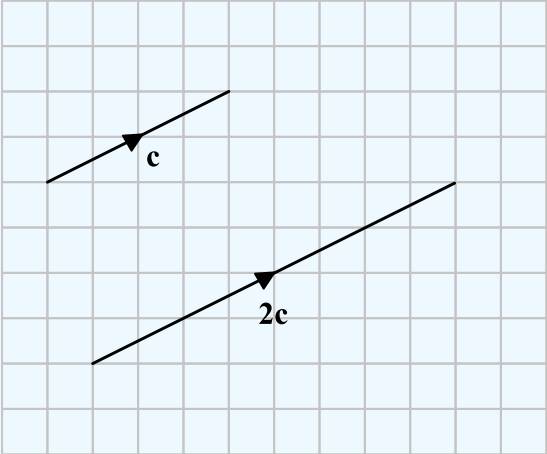
Question	Working	Answer	Notes
Q16b	$\frac{5}{7} = \frac{15}{21}$	$<$	A1
Q16c	$2\frac{1}{4} = \frac{9}{4}$	$=$	A1
Q17	Area trapezium: $\frac{1}{2}(8 + 11) \times 7 = 66.5$ $66.5 \times 2 = 133$ $133 \div 5 = 26.6$	$x = 26.6\text{cm}$	M1 Area trapezium: $\frac{1}{2}(8 + 11) \times 7 (= 66.5)$ M1 $66.5 \times 2 (= 133)$ 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			M1 Two points correctly plotted A1 All three points correctly plotted
Q20b		Positive correlation	B1
Q20c			M1 Appropriate line of best fit drawn A1 44 – 46, from their line of best fit
Q21	<p>$60 \times 4 = 240$ plants</p> <p>240 in ratio 2:2:1</p> <p>$2 + 2 + 1 = 5$, $240 \div 5 = 48$, $2 \times 48 = 96$</p> <p>96:96:48</p> <p>$96 \times 65 = 6175 = \pounds 62.40$</p> <p>$96 \times 59 = 5664 = \pounds 56.64$</p> <p>$48 \times 85 = 4080 = \pounds 40.80$</p> <p>$62.40 + 56.64 + 40.80 = \pounds 159.84$</p>	<p>$\pounds 159.84$</p>	<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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