



THIRD SPACE
LEARNING

Mathematics

Paper 1

(Non-Calculator)

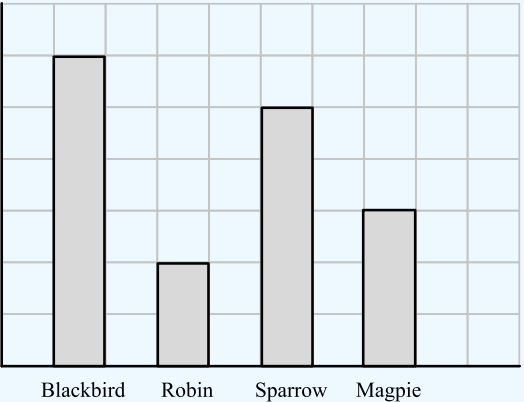
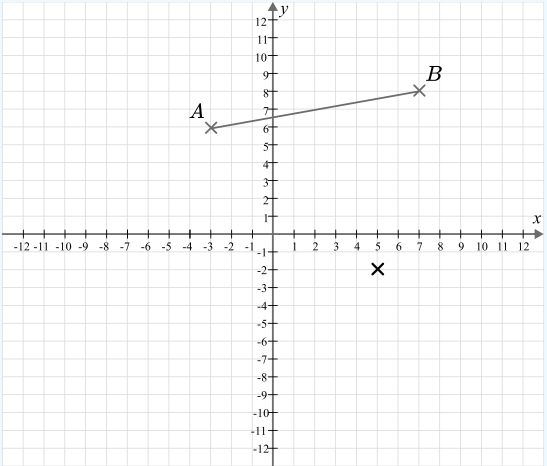
Foundation Tier

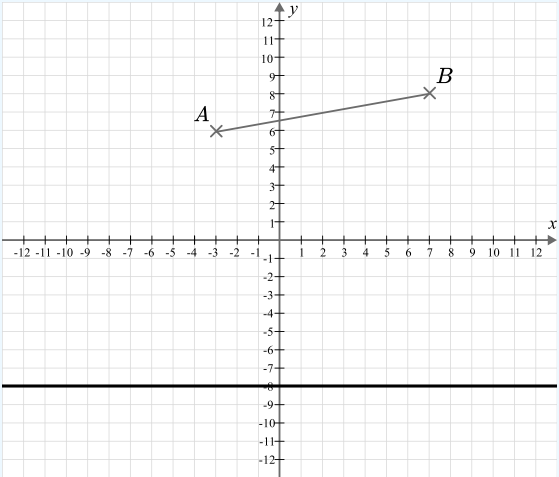
Mark Scheme

AQA GCSE

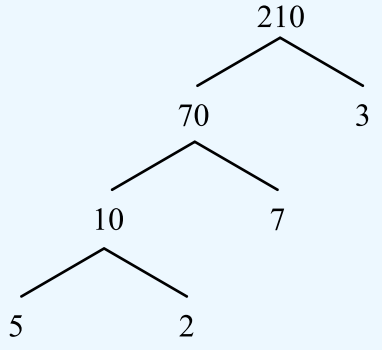
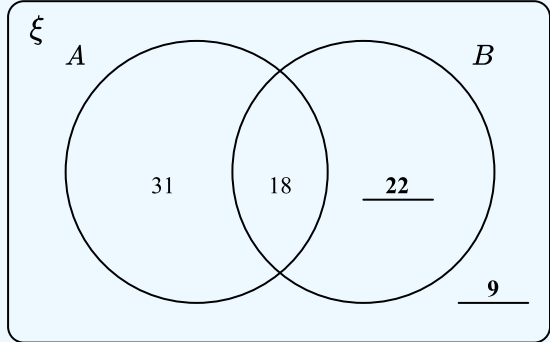
SET 5

Question	Working	Answer	Notes															
Q1a		301																
Q1b	$20 \times 7 = 140$ $4 \times 7 = 28$ $140 + 28 = 168$	168	M1 Attempt to use grid method, column method or other valid method A1 cao															
Q2a		35 centimetres																
Q2b		6000 grams																
Q2c		0.243 litres																
Q3a		5																
Q3b	3 4 5 5 5 6 6 7 9	5	M1 Orders values and attempts to find the middle A1 cao															
Q4a		32°																
Q4b		4cm																
Q5a		-40																
Q5b		-17																
Q6a	<table border="1"> <thead> <tr> <th>Bird</th> <th>Tally</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>Blackbird</td> <td> </td> <td>6</td> </tr> <tr> <td>Robin</td> <td> </td> <td>2</td> </tr> <tr> <td>Sparrow</td> <td> </td> <td>5</td> </tr> <tr> <td>Magpie</td> <td> </td> <td>3</td> </tr> </tbody> </table>	Bird	Tally	Frequency	Blackbird		6	Robin		2	Sparrow		5	Magpie		3		B1 At least 3 rows correct B1 Fully correct
Bird	Tally	Frequency																
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Question	Working	Answer	Notes										
<p>Q6b</p>	 <table border="1" style="display: none;"> <caption>Data for Q6b Bar Chart</caption> <thead> <tr> <th>Bird Name</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>Blackbird</td> <td>6</td> </tr> <tr> <td>Robin</td> <td>2</td> </tr> <tr> <td>Sparrow</td> <td>5</td> </tr> <tr> <td>Magpie</td> <td>3</td> </tr> </tbody> </table>	Bird Name	Frequency	Blackbird	6	Robin	2	Sparrow	5	Magpie	3		<p>M1 Labelling bird names on horizontal axis OR a linear scale on the vertical axis</p> <p>M1 At least 2 bars correct ft their frequency table</p> <p>A1 ft their frequencies or tallies in (a).</p>
Bird Name	Frequency												
Blackbird	6												
Robin	2												
Sparrow	5												
Magpie	3												
<p>Q7a</p>		$n = 9$											
<p>Q7b</p>		$p = 55$											
<p>Q8</p>	$30 - 16 = 14$ $16 : 14$	$8 : 7$	<p>M1 16 : 14</p> <p>A1 cao</p>										
<p>Q9a</p>													

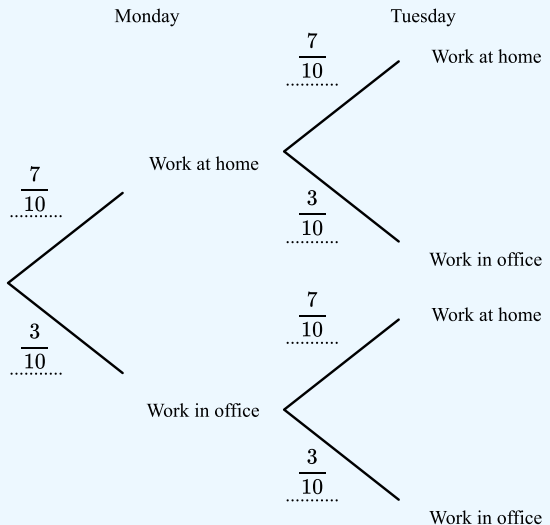
Question	Working	Answer	Notes
Q9b		(2, 7)	
Q9c			
Q10	$\frac{9}{15} + \frac{2}{15} = \frac{11}{15}$	$\frac{11}{15}$	M1 Correct use of a common denominator A1 $\frac{11}{15}$ oe
Q11	$\begin{aligned} p &= 3 \times 5 - 2 \times 12 \\ &= 15 - 24 \\ &= -9 \end{aligned}$	-9	M1 Substitutes 5 and 12 into the expression A1 cao
Q12	$\begin{aligned} 83 \times 2.92 &\approx 80 \times 3 \\ &= 240 \end{aligned}$	240	M1 Rounds at least one value to 1sf A1 cao

Question	Working	Answer	Notes
Q13	Perimeter of rectangle $= 10 + 10 + 4 + 4 = 28$ Perimeter of triangle = 14 $14 - 3 = 11$ $11 \div 2 = 5.5$	$x = 5.5$	M1 Perimeter of rectangle = 28 M1 Perimeter of triangle = 14 M1 $14 - 3 = 11$ A1 ($x =$) 5.5 or $\frac{11}{2}$ oe
Q14	12 cupcakes = 100g sugar 6 cupcakes = 50g 30 cupcakes = 100 + 100 + 50 = 250g sugar	250g	M1 Correct first step e.g. amount of sugar for 6 or 24 cupcakes A1 cao
Q15a	$2 \times 2 \times 2 \times 2 = 16$	16	
Q15b		1	
Q16a		$10y - 15$	
Q16b	$12x - 28 - 2x + 10$ $= 10x - 18$	$10x - 18$	M1 Both brackets correctly expanded A1 cao
Q16c		$x(x - 7)$	
Q17		Translation $\begin{pmatrix} -6 \\ 1 \end{pmatrix}$	B1 Translation B1 6 left and 1 up or given as a vector

Question	Working	Answer	Notes
<p>Q18</p>		$2 \times 3 \times 5 \times 7$	<p>M1 Correct prime factors identified A1 cao</p>
<p>Q19</p>	<p>40% = 200 10% = 50 90% = 450</p>	<p>450</p>	<p>M1 Finds 10% A1 cao</p>
<p>Q20a</p>		<p>22 9</p>	<p>B1 cao B1 ft their “22”, provided that their “22” + 31 + 18 < 80</p>
<p>Q20b</p>		<p>$\frac{18}{80}$ oe</p>	

Question	Working	Answer	Notes																				
<p>Q21</p>	$g = 3f - 4$ $g + 4 = 3f$ $\frac{g + 4}{3} = f$	$f = \frac{g + 4}{3}$	<p>M1 $g + 4 = 3f$ or $\frac{g}{3} = f - \frac{4}{3}$</p> <p>A1 cao</p>																				
<p>Q22</p>	<table border="1"> <thead> <tr> <th></th> <th>Always true</th> <th>Sometimes true</th> <th>Never true</th> </tr> </thead> <tbody> <tr> <td>$2n$ is odd</td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td>n^2 is odd</td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>$n^3 + n$ is odd</td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td>$(5n - 2)^2$ is odd</td> <td>✓</td> <td></td> <td></td> </tr> </tbody> </table>		Always true	Sometimes true	Never true	$2n$ is odd			✓	n^2 is odd	✓			$n^3 + n$ is odd			✓	$(5n - 2)^2$ is odd	✓				<p>B1 for each correct answer</p>
	Always true	Sometimes true	Never true																				
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$n^3 + n$ is odd			✓																				
$(5n - 2)^2$ is odd	✓																						
<p>Q23</p>	$\frac{11}{20} \text{ of } 180 = 99$ $L : R = 3 : 2 = 15 : 10$ $R : T = 5 : 4 = 10 : 8$ $L : R : T = 15 : 10 : 8$ $99 \div 33 = 3$ $15 \times 3 = 45$	<p>45</p>	<p>M1 $\frac{11}{20}$ of 180 = 99</p> <p>M1 Multiplies ratios to make R parts the same</p> <p>M1 Their “99” divided by their “33”</p> <p>A1 cao</p>																				
<p>Q24</p>	$3.15 \times 10^4 = 31500$ $3.15 \times 10^{-2} = 0.0315$ $3.15 \times 10^{-1} = 0.315$ <p>3150</p> <p>0.0315, 0.315, 3150, 31500</p>	$3.15 \times 10^{-2}, 3.15 \times 10^{-1}, 3150, 3.15 \times 10^4$	<p>M1 Correctly converts at least two values from standard form or converts $3150 = 3.15 \times 10^3$</p> <p>A1 cao</p>																				

Question	Working	Answer	Notes
Q25	$360 = 60\%$ $60 = 10\%$ $600 = 100\%$	£600	M1 $360 = 60\%$ seen or implied A1 cao
Q26	Pentagon: $\frac{3 \times 180}{5} = 108$ Triangle: $\frac{180}{3} = 60$ $108 + 60 + 60 = 228$ $360 - 228 = 132$		M1 Interior angle of pentagon = 108 M1 $108 + 108 + 60 = 228$ A1 Full solution with no errors
Q27		$\frac{\sqrt{3}}{2}$	
Q28	$\frac{5^5 \times 5^{-2}}{5} = \frac{5^3}{5} = 5^2 = 25$	25	M1 Numerator simplified to 5^3 A1 cao
Q29	Area A: $\pi \times (\sqrt{13})^2 = 13\pi$ Area B: $\frac{1}{3} \times \pi \times 6^2 = 12\pi$	A	M1 $\pi \times (\sqrt{13})^2$ or $\pi \times 6^2$ M1 Correctly squares $\sqrt{13}$ and reaches 13π M1 Divides 36π by 3 to get 12π A1 Correct answer from correct working


Question	Working	Answer	Notes
<p>Q30a</p>	$p \times p = \frac{49}{100}$ $p = \sqrt{\frac{49}{100}} = \frac{7}{10}$ 		<p>M1 $p = \sqrt{\frac{49}{100}} = \frac{7}{10}$</p> <p>M1 $P(\text{work in office}) = \frac{3}{10}$</p> <p>A1 Correctly completed tree diagram</p>
<p>Q30b</p>	<p>$P(\text{office, home}): \frac{3}{10} \times \frac{7}{10} = \frac{21}{100}$</p> <p>$P(\text{home, office}): \frac{7}{10} \times \frac{3}{10} = \frac{21}{100}$</p> <p>$\frac{21}{100} + \frac{21}{100} = \frac{42}{100}$</p>	<p>$\frac{42}{100}$ oe</p>	<p>M1 for a correct probability for one day (e.g. “$\frac{3}{10}$” × “$\frac{7}{10}$” or “$\frac{7}{10}$” “$\frac{3}{10}$”)</p> <p>ft their value for p in pt (a)</p> <p>M1 ft their “$\frac{21}{100}$” × 2</p> <p>A1 cao</p>

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