



THIRD SPACE
LEARNING

Mathematics

Paper 3



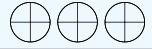




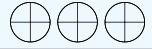



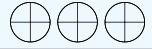

(Calculator)

Foundation Tier

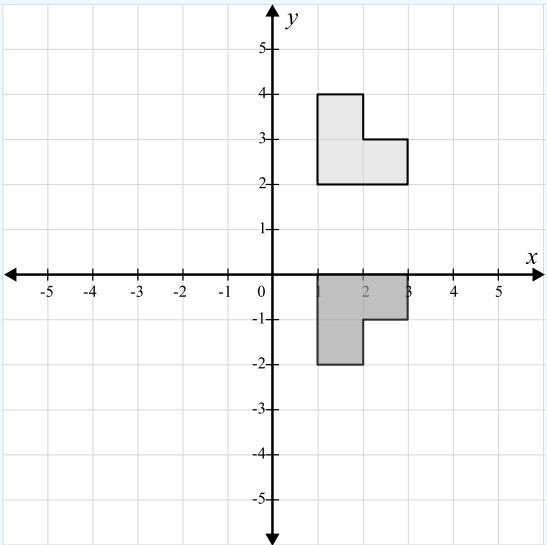
Mark Scheme

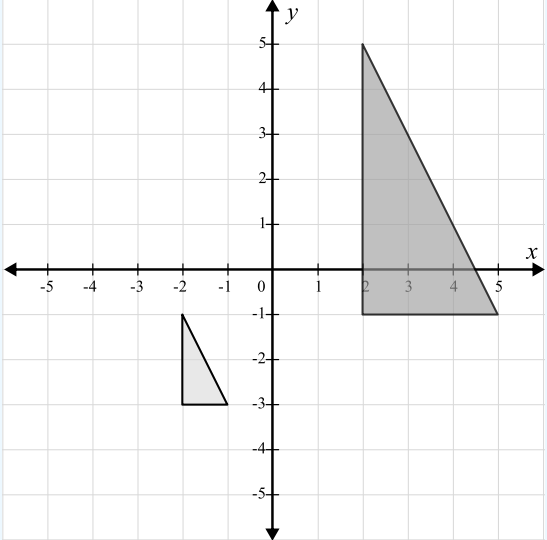
AQA GCSE

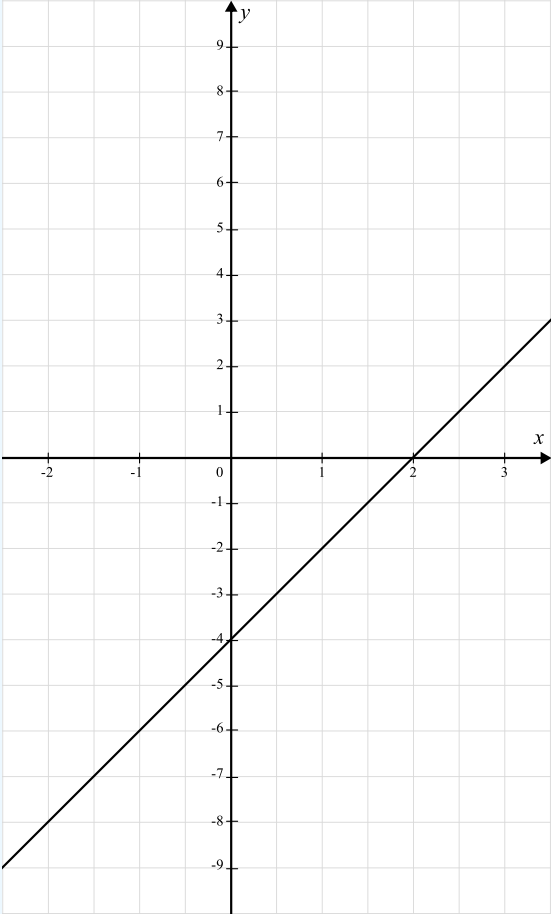
SET 5

Question	Working	Answer	Notes								
Q1a		1, 3, 7, 21									
Q1b		Any multiple of 15									
Q2		11.50am									
Q3a		25cm ²									
Q3b	Perimeter = 24cm	Any rectangle with a perimeter of 24cm	M1 P = 24cm or $l + w = 12$ or $2l + 2w = 24$ A1 Any correct rectangle								
Q4	$5.2 \times 80 = 416$ $3.5 \times 80 = 280$	Length 416cm Width 280cm	M1 Correctly measures length or width A1 Multiplies their values by 80 A1 Width correct								
Q5	$4 \times 5 = 20$ apples required 4 packs required $4 \times 99p = \text{£}3.96$ 20 apples requires $20 \times 18 = \text{£}3.60$ Cheaper to buy individual apples	Individual apples	M1 20 apples required or $4 \times 5 = 20$, $4 \times 99p = \text{£}3.96$ M1 $20 \times 18 = \text{£}3.60$ A1 Correct answer from correct working								
Q6a	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>Owls</td> <td></td> </tr> <tr> <td>Buzzards</td> <td></td> </tr> <tr> <td>Red kites</td> <td></td> </tr> <tr> <td>Ospreys</td> <td></td> </tr> </table> <div style="display: inline-block; vertical-align: middle; margin-left: 20px;"> Key:  = 8 birds </div>	Owls		Buzzards		Red kites		Ospreys			B1 Correct for red kites
Owls											
Buzzards											
Red kites											
Ospreys											
Q6b	$22:28 = 11:14$	11:14	M1 22 and 28 A1 Correct simplified ratio								

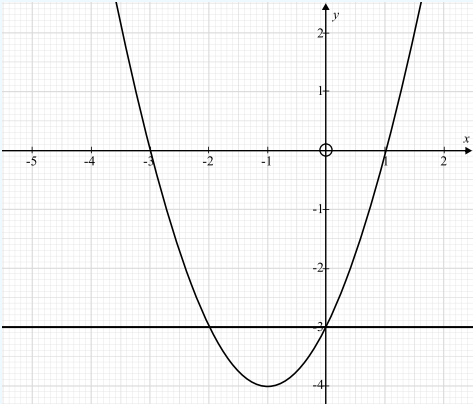
Question	Working	Answer	Notes
Q6c	$\frac{10}{84} = \frac{5}{42}$	$\frac{10}{84}$	M1 10 or 84 seen A1 $\frac{10}{84}$ oe
Q7a		$\frac{2}{24}$ or any equivalent fraction	A1 Any equivalent fraction
Q7b	$\frac{1}{12} = \frac{2}{24}$ $\frac{2}{12} = \frac{4}{24}$	$\frac{3}{24}$	A1 Any fraction that is greater than $\frac{1}{12}$ and $\frac{2}{12}$
Q8		$y = 7x + 3$	B2 for $y = 7x + 3$ (Award B1 for $y = 7x + k$ where $k \neq 0$ or 3 or for the expression $7x + 3$)
Q9a	Annie added 4 and -3 before squaring Rebecca calculated -3 squared as -9		
Q9b	$4 + (-3)^2 = 4 + 9 = 13$	13	B1
Q10a	$12x - 8 = 52$ $12x = 60$ $x = 5$	$x = 5$	M1 Correctly expands brackets or divides by 4 A1 cao
Q10b	$4y + 1 = 22$ $4y = 21$ $y = 5.25$	$y = 5.25$	M1 Multiplies by 11 A1 cao
Q11	$24 \times 7 = 168$ $\frac{40}{84} = \frac{5}{21}$	$\frac{5}{21}$	M1 $24 \times 7 = 168$ A1 Correct, simplified fraction

Question	Working	Answer	Notes
<p>Q12</p>	$V = 6.3 \times 2.7 \times 3.1 = 52.731\text{cm}^3$	52.7cm^3	<p>M1 $6.3 \times 2.7 \times 3.1$ A1 cao</p>
<p>Q13</p>	<p>12 pages per 20s = 36 pages per min $36 \times 8 = 288$ 11 pages per 15s = 44 pages per min $44 \times 10 = 440$ $288 + 440 = 728$</p>	<p>728</p>	<p>M1 12 pages per 20s = 36 pages per min M1 $36 \times 8 = 288$ M1 11 pages per 15s = 44 pages per min $44 \times 10 = 440$ A1 cao</p>
<p>Q14a</p>			<p>M1 Rotation 90° A1 Fully correct</p>

Question	Working	Answer	Notes
<p>Q14b</p>			<p>M1 Enlargement scale factor 3 A1 Fully correct</p>
<p>Q15</p>	<p>2% of 125 000 = 2500 5% of 80 000 = 4000</p> <p>Total stamp duty = 2500 + 4000 = £6500 £330 000 + £6500 + £2000 = £338 500</p> <p>Yes he can afford it</p>	<p>Yes</p>	<p>M1 2% of 125 000 = 2500 M1 5% of 80 000 = 4000 M1 Total stamp duty = 2500 + 4000 = £6500 A1 Correct conclusion from correct working</p>

Question	Working	Answer	Notes																
<p>Q16</p>	<table border="1" data-bbox="286 256 835 355"> <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		<p>M1 At least 2 correct points plotted or stated or a line through (0, -4) or a line with gradient 2</p> <p>M1 A line through at least 3 correct points or all points plotted but not joined</p> <p>A1 cao</p>
x	-2	-1	0	1	2	3	4												
y	-8	-6	-4	-2	0	2	4												
<p>Q17a</p>	$\frac{16}{40} \times 220 = 88$	<p>88</p>	<p>M1 $\frac{16}{40}$ seen</p> <p>A1 cao</p>																

Question	Working	Answer	Notes
Q17b		We have assumed that the sample is representative of all pupils	
Q18a		41° Corresponding angles are equal	A1 41° B1 Corresponding angles are equal
Q18b		No because angles <i>DCG</i> and <i>CGH</i> are co-interior so they add up to 180°	B1 No B1 Correct explanation
Q19a		q^{12}	
Q19b		$2p^7$	M1 2 or 7 correct A1 cao
Q19c	$4 \times 3 = 12$ $2^3 = 8$	$a = 4$ $b = 8$	B1 $a = 4$ B1 $b = 8$
Q20a	$1 - 0.7 = 0.3$	0.3	
Q20b	$200 \times 0.7 = 140$	140	
Q21a		3.4×10^{-5}	
Q21b		27100	
Q21c	$\frac{3 \times 10^8}{4.5 \times 10^9} = \frac{3}{45} = \frac{1}{15}$	$\frac{1}{15}$	B1 Fully simplified fraction
Q22a	$5^2 + 8^2 = 89$ $\sqrt{89} = 9.433981132$	9.43cm	M1 $5^2 + 8^2 = 89$ A1 cao


Question	Working	Answer	Notes
Q22b	Area of semi circle: $\frac{1}{2} \times \pi \times \left(\frac{\sqrt{89}}{2}\right)^2$ $= \frac{1}{2} \times \pi \times 4.716(99\dots)^2$ $= 34.950(21827\dots)$ Area of triangle: $\frac{1}{2} \times 5 \times 8 = 20$ Shaded area: $34.950(21827\dots) - 20 = 14.950(21827\dots)$	34.95cm ²	M1 ft their radius in (a) = “9.433(981132...)” ÷ 2 M1 ft $\frac{1}{2} \times \pi \times$ their r squared M1 $\frac{1}{2} \times 5 \times 8 = 20$ A1 cao
Q23	$\frac{3a + 5a + 2 + 2a + 8}{3} = 120$ $10a + 10 = 360$ $10 = 350$ $a = 35$ Smallest value: $2 \times 35 + 8 = 78$	78	M1 Sets up equation or multiplies 120 by 3 A1 $a = 35$ M1 Substitutes a into at least one expression A1 cao
Q24		>	
Q25a		(-1, -4)	
Q25b		$x = -2$ and $x = 0$	M1 Line drawn at -3 or indication of reading from graph at $y = -3$ A1 Both correct solutions

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