



THIRD SPACE
LEARNING

Mathematics

Paper 2

(Calculator)

Foundation Tier

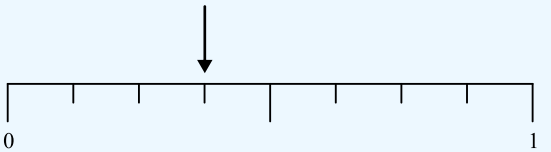
Mark Scheme

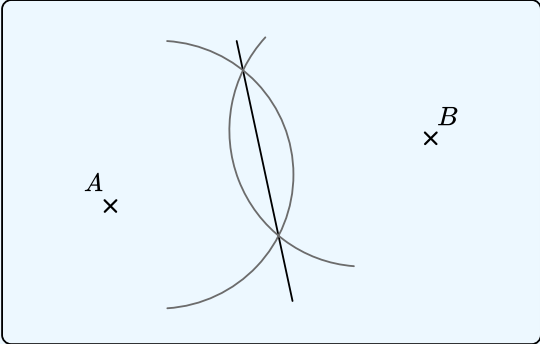
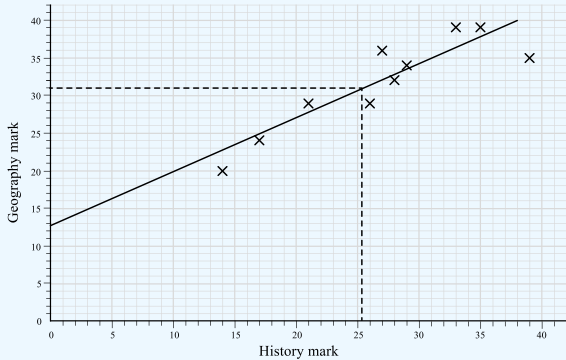
Edexcel GCSE

SET 5

Question	Working	Answer	Notes
Q1		-17, -7, -1, 0.7, 7	
Q2		$\frac{77}{100}$	
Q3		38700	
Q4a		4b	
Q4b		9a	
Q5		Pyramid or Square based pyramid	
Q6	$69871 - 69543 = 328$ $328 \times 45 = 14760\text{p}$ $14760\text{p} = \text{£}147.60$	£147.60	M1 $69871 - 69543 = 328$ M1 Multiply by 45 or 0.45 M1 14760p or £147.60 A1 Correct answer in £
Q7		SC, ST, SA, PC, PT, PA, BC, BT, BA	M1 At least 4 correct combinations A1 6 distinct combinations
Q8	$180 - 148 = 32$	32°	
Q9a	0711 to 0744	33 minutes	

Question	Working	Answer	Notes
Q9b	Leave house by 0803 Catch bus in Saron at 0811 Get off bus in Carmarthen at 0855 Arrive at office 0906		B1 Leave house by 0803 B1 Catch bus in Saron at 0811 Get off bus in Carmarthen at 0855 B1 Arrive at office 0906
Q10a		4.8km	
Q10b	9km = 5.6 miles 90km per hour = 56 miles per hour	Yes	M1 9km = 5.6 miles M1 90km per hour = 56 miles per hour B1 Yes he breaks the speed limit - correct conclusion following correct working
Q11	$\frac{3}{4} = \frac{30}{40}$ $\frac{7}{10} = \frac{28}{40}$ $\frac{3}{5} = \frac{24}{40}$ $\frac{33}{40}$ $\frac{24}{40}, \frac{28}{40}, \frac{30}{40}, \frac{33}{40}$	$\frac{3}{5}, \frac{7}{10}, \frac{3}{4}, \frac{33}{40}$	M1 Attempts to convert fractions to common denominator or to decimals/percentages A1 cao
Q12a		2.631264662	M1 A1
Q12b		2.63	

Question	Working	Answer	Notes																				
<p>Q13</p>	<table border="1" data-bbox="286 263 835 422"> <thead> <tr> <th></th> <th>Margherita</th> <th>Hawaiian</th> <th>Pepperoni</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Child</td> <td>42</td> <td>18</td> <td>22</td> <td>82</td> </tr> <tr> <td>Adult</td> <td>20</td> <td>36</td> <td>12</td> <td>68</td> </tr> <tr> <td>Total</td> <td>62</td> <td>54</td> <td>34</td> <td>150</td> </tr> </tbody> </table>		Margherita	Hawaiian	Pepperoni	Total	Child	42	18	22	82	Adult	20	36	12	68	Total	62	54	34	150	<p>22</p>	<p>M1 Sets up 2 way table M1 68 adults M1 36 adults/54 people chose hawaiian A1 22 children chose pepperoni</p>
	Margherita	Hawaiian	Pepperoni	Total																			
Child	42	18	22	82																			
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<p>Q14</p>	<p>$3000 \times 5 = 15000$ $24 \times 16 = 384$ tubes of toothpaste per box $15000 \div 384 = 39.065$</p>	<p>39</p>	<p>M1 $3000 \times 5 = 15000$ M1 $24 \times 16 = 384$ M1 $15000 \div 384 = 39.065$ A1 39 – must be whole number</p>																				
<p>Q15</p>	<p>$3 + 7 + 6 = 16$ $P(\text{yellow}) = \frac{6}{16} = \frac{3}{8}$</p> 		<p>M1 $P(\text{yellow}) = \frac{6}{16} (= \frac{3}{8})$ A1 Arrow placed in correct place</p>																				
<p>Q16</p>	$\frac{50 \times 6 + 150 \times 16 + 250 \times 11 + 350 \times 10 + 450 \times 7}{6 + 16 + 11 + 10 + 7}$ $= \frac{12100}{50}$ $= 242$	<p>242</p>	<p>M1 Correct midpoints multiplied by frequencies M1 “12100” \div “50” (where their “12100” has come from five products within the group intervals and their “50” is $\sum f$) A1 cao</p>																				

Question	Working	Answer	Notes
Q17			M1 Construction arcs as shown A1 Correct line
Q18a		$n > -1$	
Q18b	$3p - 11 < p + 5$ $2p - 11 < 5$ $2p < 16$ $p < 8$	$p < 8$	M1 $2p - 11 < 5$ M1 $2p < 16$ A1 $p < 8$
Q19a	Those with higher marks in history also had higher marks in geography		Accept positive correlation
Q19b		31	M1 For method to read off (e.g. line of best fit or a line up from 25) A1 for an answer in the range 26 - 36

Question	Working	Answer	Notes
Q19c		Geography seems easier as the marks are generally higher	B1 'Geography seems easier' B1 'Because the marks are generally higher' oe
Q20a	Difference = 5	$5n + 1$	B1 $5n + k$, where $k \neq 1$, or k missing
Q20b	$n^2 + 3 = 172$ $n^2 = 169$ $n = 13$ 172 is 13th term 14th term: $14^2 + 3 = 199$	199	M1 Attempt to solve $n^2 + 3 = 172$ M1 Establish 14th term needed A1 cao
Q21a	3 parts = 27 1 part = 9 5 parts = 45	45	M1 $27 \div 3 \times 5$ oe A1 cao
Q21b	$\frac{3}{5}$ of 45 = 27 $\frac{2}{3}$ of 27 = 18 27 + 18 = 45 have popcorn $\frac{45}{72} \times 100 = 62.5\%$	62.5%	M1 $\frac{3}{5}$ of 45 = 27 M1 $\frac{2}{3}$ of 27 = 18 A1 $\frac{45}{72} \times 100 = 62.5\%$
Q22	$\tan(x) = \frac{6}{11}$ $x = \tan^{-1}\left(\frac{6}{11}\right)$ $x = 28.61045967$	$x = 28.6^\circ$	M1 $\tan(x) = \frac{6}{11}$ or $x = \tan^{-1}\left(\frac{6}{11}\right)$ A1 Correct answer, rounded to 3sf

Question	Working	Answer	Notes
Q23	Try different values: $7000 \times 1.06^4 = 8837.34$ $7000 \times 1.06^5 = 9367.58$ $7000 \times 1.06^6 = 9929.63$	$n = 5$	M1 Tries at least 1 value for n A1 cao
Q24	$50^2 + 70^2 = 7400$ $\sqrt{7400} = 86.02(\dots)$ $86.02(\dots) + 50 + 70 = 206.02(\dots)$ $206.02(\dots) \times 2.50 = \text{£}515.058 (131\dots)$	£515.06	M1 Attempts to use Pythagoras theorem M1 ft Their “86.02” + 50 + 70 (dep on previous M1) M1 ft Multiplies their “206.02” by 2.50 A1 cao
Q25	$15a + 10b = 55$ $8a - 10b = 60$ $23a = 115$ $a = 5$ $3 \times 5 + 2b = 11$ $15 + 2b = 11$ $2b = -4$ $b = -2$	$a = 5$ $b = -2$	M1 Correct method to eliminate either a or b M1 (dep) For substituting found value in one of the equations A1 Both values correct
Q26a	$\frac{1}{0.4} = 2.5$	2.5	


Question	Working	Answer	Notes
Q26b		$5.25 \leq x < 5.35$	B1 5.25 B1 5.35
Q27	Co-interior angle = $180 - 121 = 59$ Bearing = $360 - 59 = 301^\circ$	301°	M1 Correct sketch with bearing labelled or correct first step A1 cao
Q28	Scale factor: $18 \div 12 = 1.5$ $1.5(2x + 10) = 5x + 9$ $3x + 15 = 5x + 9$ $15 = 2x + 9$ $6 = 2x$ $x = 3$ Perimeter = $5 \times 3 + 9 + 3 \times 3 + 4 + 18$ $= 24 + 13 + 18$ $= 55\text{cm}$	55cm	B1 Scale factor: $18 \div 12 (= 1.5)$ M1 "Their 1.5" $\times (2x + 10) = 5x + 9$ A1 $x = 3$ M1 (dep at least M1 previously awarded) Substitutes their "x" to find perimeter A1 cao

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