



THIRD SPACE  
LEARNING

# Mathematics

## Paper 3

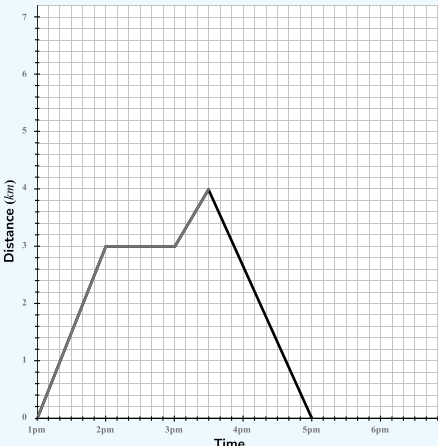
### (Calculator)

## Foundation Tier

## Mark Scheme

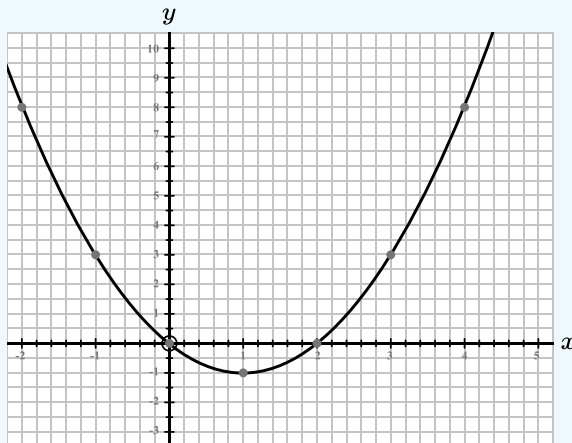
Edexcel GCSE

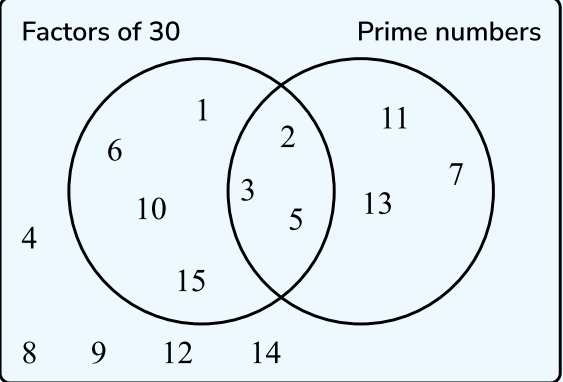
SET 2

Question	Working	Answer	Notes
Q1		0.103, 0.31, 1.033, 1.11, 1.3	B1 cao
Q2	$40 \div 5 = 8$	8	A1 cao
Q3		10.35am	A1 cao
Q4		24 or 30	A1 one correct answer
Q5		80%	A1 cao
Q6a		5:7	B1 cao
Q6b	3 more shaded = 8 shaded $\frac{8}{12} = \frac{2}{3}$	$\frac{2}{3}$	M1 $\frac{8}{12}$ seen A1 correct fully simplified fraction
Q7		25, 36	A1 25 A1 36
Q8a		1 hour	B1 cao
Q8b			M1 Line drawn all the way down to x axis A1 Correct line to 5pm

Question	Working	Answer	Notes
<b>Q9a</b>	$1 - 0.2 = 0.8$	0.8	A1 cao
<b>Q9b</b>	$\frac{1}{8} = 0.125$ $0.2 = \frac{1}{5}$	Nathanial	M1 $\frac{1}{8} = 0.125$ or $0.2 = \frac{1}{5}$ and attempt at common denominator A1 Correct answer following correct working
<b>Q10a</b>	$0.15 \times 420 = \text{£}63$ $\text{£}420 - 63 = \text{£}357$	£357	M1 £63 seen or implied A1 cao
<b>Q10b</b>	$0.1 \times 357 = \text{£}35.70$ $\text{£}357 - 35.70 = \text{£}321.30$		M1 10% of £357 = £35.70 A1 £321.30 reached following correct method
<b>Q11</b>	1. The points have been plotted at the lower bounds of the class intervals rather than the midpoints 2. The first and last points have been joined		B1 One correct statement B1 Two correct statements
<b>Q12</b>		F - R F - H F - B R - H R - B H - B	M1 At least 4 correct combinations A1 Exactly six distinct combinations

Question	Working	Answer	Notes
<b>Q13</b>	$42 \div 7 = 6$ $6 \times 2 = 12$ small blocks $6 \times 5 = 30$ large blocks $12 \times 350 = 4200g = 4.2kg$ $30 \times 600 = 18000g = 18kg$ $4.2 + 18 = 22.2kg$ They do not have enough	No	M1 $42 \div 7 = 6$ A1 12 small blocks and 30 large blocks M1 <i>ft</i> their ' $12' \times 350$ and their ' $30' \times 600$ A1 22.2kg with a correct statement
<b>Q14a</b>		-6	A1 cao
<b>Q14b</b>		4	A1 cao
<b>Q15a</b>		$063^\circ$	M1 North line drawn from the lighthouse and line from lighthouse to ship drawn A1 Answer in range $061^\circ - 065^\circ$
<b>Q15b</b>	$4.5 \times 20 = 90km$	$90km$	M1 Line measured with measurement in range 4.4 - 4.6cm seen A1 cao
<b>Q16a</b>		$2^2 \times 3 \times 7$ or $2 \times 2 \times 3 \times 7$	M1 At least three correct prime factors identified A1 Correct product of primes
<b>Q16b</b>	$30 = 2 \times 3 \times 5$ LCM: $2^2 \times 3 \times 5 \times 7 = 420$	420	M1 30 written as product of primes or multiples of 30 and 84 listed A1 cao

Question	Working	Answer	Notes																
Q17a		$6(2x + 3y)$	M1 $6(ax + by)$ A1 cao																
Q17b	$12x + 6 = 54$ $12x = 48$ $x = 4$	$x = 4$	M1 Correct first step (expand brackets or divide by 3) leading to $x =$ A1 cao																
Q18a	1 hour 30 minutes = 1.5 hours $\frac{22.8}{1.5} = 15.2km/h$	$15.2km/h$	M1 1.5 hours seen or an attempt to divide a distance by a time A1 cao																
Q18b		A	B1 cao																
Q19a	<table border="1"><tr><td><math>x</math></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><math>y</math></td><td>8</td><td>3</td><td>0</td><td>-1</td><td>0</td><td>3</td><td>8</td></tr></table>	$x$	-2	-1	0	1	2	3	4	$y$	8	3	0	-1	0	3	8	8, 0, 3	M1 One correct value A1 Fully correct table
$x$	-2	-1	0	1	2	3	4												
$y$	8	3	0	-1	0	3	8												
Q19b			M1 <i>ft</i> At least 4 of their points plotted correctly A1 All points plotted correctly and joined with a curve																

Question	Working	Answer	Notes
Q20			M1 2, 3, 5 correctly placed in centre M1 1, 6, 10, 15 or 11, 7, 13 correctly placed M1 4, 8, 9, 12, 14 placed on outside A1 Fully correct Venn diagram
Q21a		$p^7$	A1 cao
Q21b		$4q^5$	M1 $4q^x$ or $xq^5$ A1 cao
Q22	$\pi \times 7^2 = 153.938\dots$ $\frac{3}{4} \times 153.938\dots = 115.45353\dots$	$115.5\text{cm}^2$	M1 $\pi \times 7^2 = 153.938\dots$ M1 Correct method to find $\frac{3}{4}$ of their area A1 cao
Q23		$8.65 \leq n < 8.75$	A1 8.65 A1 8.75
Q24a	$0 \times 8 + 1 \times 13 + 2 \times 7 + 3 \times 3 + 4 \times 1$ $= 40$ $40 \div 32 = 1.25$	1.25	M1 Multiplying number of siblings by frequencies M1 <i>ft</i> Their sum divided by 32 A1 cao
Q24b	At least two siblings: $7 + 3 + 1 = 11$ , $\frac{11}{32} \neq \frac{5}{16}$	No	A1 Correct statement following correct reasoning

Question	Working	Answer	Notes
<b>Q25a</b>	Angle sum is $(n - 2) \times 180 = 4 \times 180 = 720^\circ$ 6 angles so interior angle is $720 \div 6 = 120^\circ$ Isosceles triangle so angles ABF and AFB equal $180 - 120 = 60$ $60 \div 2 = 30^\circ$	$30^\circ$	M1 A correct method to find interior angle of hexagon M1 Interior angle of hexagon $120^\circ$ M1 $\frac{180 - 120}{2}$ oe with either 'angles in a triangle add up to $180^\circ$ ' or 'isosceles triangle' A1 Correct answer following correct reasoning
<b>Q25b</b>	$180 - 90 - 60 = 30$	$30^\circ$	M1 Angle CBF = $90^\circ$ or angle BCF = $60^\circ$ or indication that AB and CF parallel so alternate angles A1 cao
<b>Q26a</b>	Surface area: $2 \times 9 \times 16 = 288$ $2 \times 9 \times x = 18x$ $2 \times 16 \times x = 32x$ $18x + 32x + 288 = 50x + 288$		M1 Attempt to find area of each face M1 Adds all 6 areas M1 Reaches $50x + 288$ following correct method A1 Sets $50x + 288 < 900$
<b>Q26b</b>	$50x < 612$ $x < 12.24$	$x < 12.24$	M1 Subtracting 288 A1 cao
<b>Q26c</b>		12	B1 cao
<b>Q27</b>	$2y = 1.2 \times 10^4$ $4 \times 10^5 + 1.2 \times 10^4$ $400000 + 12000 = 412000$	$4.12 \times 10^5$	M1 Evidence of correct substitution into $x + 2y$ A1 cao

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