



THIRD SPACE
LEARNING

Mathematics

Paper 2

(Non-Calculator)

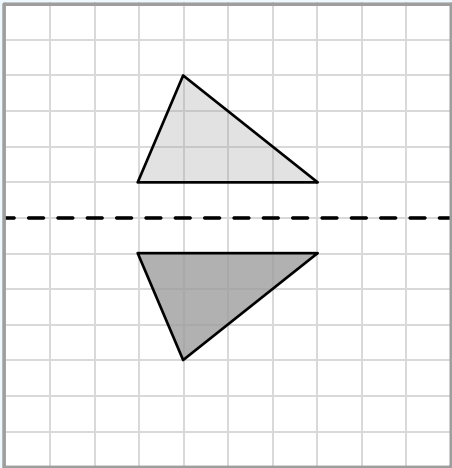
Foundation Tier

Mark Scheme

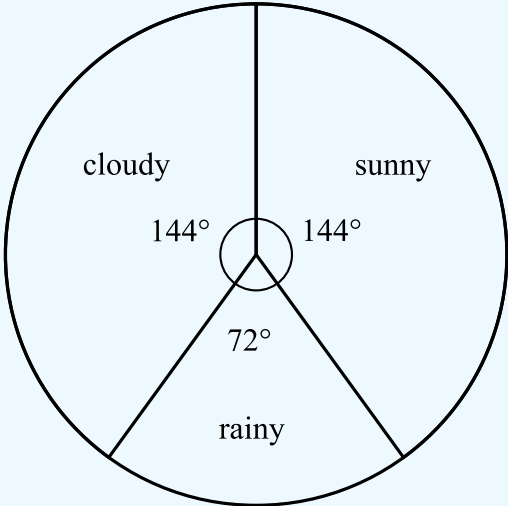
OCR GCSE

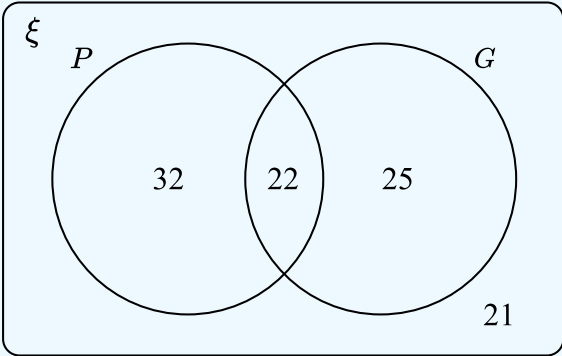
SET 3

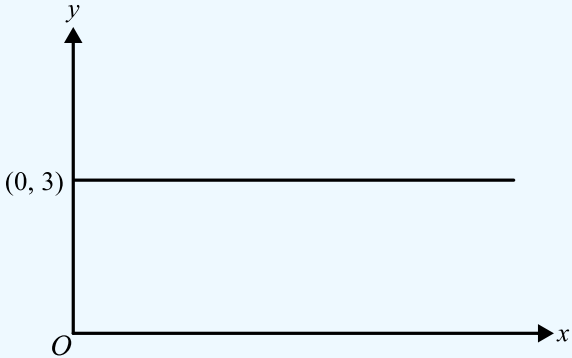
Question	Working	Answer	Notes
Q1a		0.7	A1
Q1b		$\frac{75}{100}$	A1 oe
Q2ai		147°	A1 146 – 148
Q2aii		Obtuse	B1
Q2b		Scalene	B1
Q3ai		–19	A1
Q3aii		–60	A1
Q3aiii		6.23	A1
Q3b		21 or 28	A1 for one correct answer
Q4a		3400	A1
Q4b	$60 \times 40 = 2400$	2400	M1 60 and 40 seen or implied A1 cao
Q5a	$\frac{6}{8} - \frac{5}{8} = \frac{1}{8}$	$\frac{1}{8}$	M1 $\frac{3}{4}$ converted to $\frac{6}{8}$ or other equivalent fractions with the same denominators A1 $\frac{1}{8}$ oe
Q5b	$\frac{2 \times 3}{7 \times 10} = \frac{6}{70} = \frac{3}{35}$	$\frac{3}{35}$	M1 $\frac{2 \times 3}{7 \times 10}$ seen or implied A1 Correct simplified answer

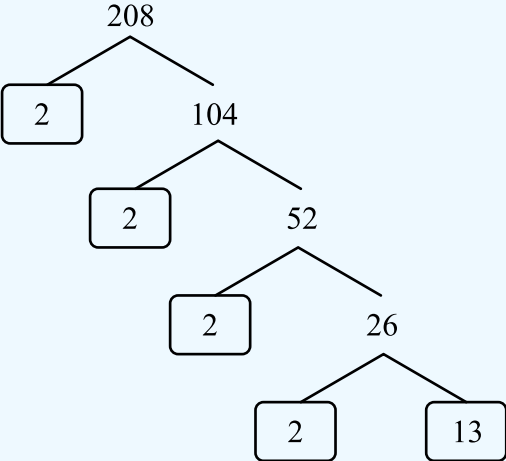
Question	Working	Answer	Notes
Q6a		$5b$	A1
Q6b		$6p + 21$	A1
Q6c		$5(q - 6)$	A1
Q7	 <p>Mirror line</p>		A1 cao
Q8a	$240 \div 2 = 120$, £120 spent on clothes $240 - 120 - 30 = 90$ left $\frac{90}{240}$	$\frac{90}{240}$	M1 $\frac{1}{2}$ of 240 = 120 M1 <i>ft</i> subtracts their '120' and 30 from 240 A1 $\frac{90}{240}$ oe
Q8b	$6:4 = 3:2$	$3:2$	M1 6 : 4 A1 cao
Q9ai	$3 + 5 \times 2^2 = 3 + 5 \times 4$ $= 3 + 20$ $= 23$	23	M1 $2^2 = 4$ or 20 seen or implied A1 cao

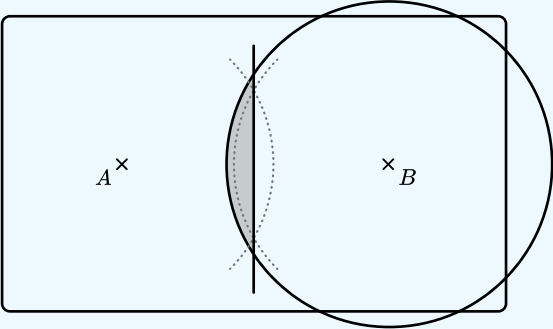
Question	Working	Answer	Notes
Q9a	$\frac{2}{5} = 0.4$ $(3.1 + 0.4) \times 0.5 = 3.5 \times 0.5$ $= 1.75$	1.75	M1 $\frac{2}{5}$ converted to 0.4 M1 $3.1 + 0.4 = 3.5$ A1 cao
Q9b		$4 \times (3 + 6) \div 2 = 18$	A1
Q10a	$1 - 0.3 = 0.7$	0.7	A1
Q10b	$200 \times 0.3 = 60$	60	M1 200×0.3 seen A1 cao
Q11	$18 \div 3 = 6$, adult ticket = £6 $2 \times 6 = 12$ $28.50 - 12 = 16.50$ $16.50 \div 5 = 3.30$ $4 \times 6 + 2 \times 3.30 = 24 + 6.60 = £30.60$	£30.60	M1 Adult ticket = £6 M1 Child ticket = £3.30 M1 <i>ft</i> substitutes their values into $4a + 2c$ A1 cao
Q12	$2 \text{ litres} = 2000\text{ml}$ 75% of 2000ml: $2000 \div 4 = 500$, $500 \times 3 = 1500\text{ml}$ $240 \times 6 = 1440\text{ml}$	No	M1 $240 \times 6 = 1440\text{ml}$ M1 $2 \text{ litres} = 2000\text{ml}$ seen or implied M1 75% of 2000 = 1500ml OR $\frac{1440}{2000} \times 100 = \frac{72}{100} \times 100 = 72\%$ A1 Correct answer following correct working

Question	Working	Answer	Notes
Q13a		12	M1 $360 \div 30 = 12$ A1 $144 \div 12 = 12$ OR M1 $\frac{144}{360} \times 30$ A1 $\frac{12}{30} \times 30 = 12$
Q13b	<p>$30 - 12 = 18$ $18 \div 3 = 6$ $6 \times 2 = 12$ Cloudy 12 days, rainy 6 days Angles: $12 \times 12 = 144$ $6 \times 12 = 72$</p> 	Cloudy 144° Rainy 72°	M1 18 days remaining M1 Attempts to divide 18 in ratio 2:1 A1 12 cloudy days and 6 rainy days M1 Multiplies by 12 to find angles for pie chart A1 Cloudy 144°, rainy 72° A1 Correct, labelled pie chart

Question	Working	Answer	Notes
Q14	Butter: $500 \div 125 = 4$ Flour: $900 \div 150 = 6$ Sugar: $450 \div 100 = 4.5$ Eggs: $12 \div 2 = 6$ $4 \times 12 = 48$	48	M1 At least one correct comparison between recipe and ingredients M1 At least 3 correct comparisons between recipe and ingredients M1 <i>ft</i> their lowest value selected A1 48 following fully correct working
Q15a	$54 + 47 + 21 = 122$ $122 - 100 = 22$ 		M1 21 placed correctly M1 22 in intersection A1 cao
Q15b	$32 + 25 = 57$	$\frac{57}{100}$	M1 <i>ft</i> Their '32' + '25' A1 cao

Question	Working	Answer	Notes
Q16ai			B1 Straight, horizontal line B1 Intersection at (0, 3) labelled
Q16aii		(7, 3)	B1 x coordinate 7 B1 y coordinate 3
Q16b		He has connected the points with straight lines	B1 Any equivalent statement
Q17	$300 \div 3 = 100$ $100 \times 50p = \text{£}50$ $50 - 40 = 10$, profit = $\text{£}10$ $\frac{10}{40} \times 100 = 25\%$	25%	M1 $300 \div 3 = 100$ M1 $100 \times 50p = \text{£}50$ or $\text{£}50 - \text{£}40 (= \text{£}10)$ M1 Attempt to find percentage profit A1 cao

Question	Working	Answer	Notes
Q18a	<div><p>$2^4 \times 13$</p></div>	4	A1 cao
Q18b	$78 = 2 \times 3 \times 13$ $HCF: 2 \times 13 = 26$	26	M1 78 written as product of primes OR at least 6 correct factors of 78 listed M1 Identifies common prime factors OR identifies a common factor A1 cao
Q19a	$11.5 \times 4 \times 4 = 184$	184	M1 $\times 4$ seen M1 $11.5 \times 4 \times 4$ oe A1 cao
Q19b		This is an arithmetic progression	A1 cao

Question	Working	Answer	Notes
Q19c	$-3 + 2 = -1$, $2 + -1 = 1$ No $-5 + 3 = -2$, $3 + -2 = 1$, $-2 + 1 = -1$ Yes $-4 + 1 = -3$ No $-2 + -2 = -4$, $-2 + -4 = -6$ No	B	A1 cao
Q20			B1 Perpendicular bisector of AB constructed (construction lines must be seen) B1 Circle or part circle, radius $4cm$ around B B1 Correct area shaded
Q21	$3.65 \times 10^5 = 365000$ $36.5 \times 10^{-2} = 0.365$	0.0365 36.5×10^{-2} 365 3.65×10^5	M1 365000 or 0.365 seen A1 cao
Q22	Angle $BHG = 90^\circ$ Interior angle of a hexagon: $\frac{4 \times 180}{6} = 120^\circ$ Angle $ABH = 120 - 90 = 30$ $90 = 3 \times 30$ so angle $BHG = 3 \times$ angle ABH		B1 Angle $BHG = 90^\circ$ M1 Attempt at a correct method to find interior angle of a hexagon M1 <i>ft</i> Angle $ABH =$ their ' 120 ' $- 90$ B1 Concluding statement

Question	Working	Answer	Notes
Q23		$\frac{1}{2}$	A1
Q24a	$\frac{1}{2} \times 4 \times 7 = 14$ $14 \times 10 = 140m^3$	$140m^3$	M1 Area of cross-section = $14m^2$ A1 cao
Q24b	$60 = \frac{F}{70}$ $F = 60 \times 70 = 4200N$ $P = \frac{4200}{40} = 105 \text{ newtons}/m^2$	$105 \text{ newtons}/m^2$	M1 $60 = \frac{F}{70}$ M1 $F = 4200N$ A1 cao
Q25	Total height of boys: $6 \times 130 = 780$ Total height of girls: $4 \times 120 = 480$ Total height of 10 players: $780 + 480 = 1260$ Mean height of 10 players: $\frac{1260}{10} = 126$	Yes	M1 $6 \times 130 = 780$ or $4 \times 120 = 480$ M1 $780 + 480 (= 1260)$ A1 $1260 \div 10$ A1 'Yes' with correct supporting working
Q26a	$3 \times 4 = 12$ $12p^{2+3} q^{1+2} = 12p^5 q^3$	$12p^5 q^3$	M1 12 or p^5 or q^3 seen A1 cao
Q26b	$a = 4(m^2)^3$	$a = 4m^6$	M1 $a = 4(m^2)^3$ A1 cao

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