

1		Proof (supported)	M1	for a method to find coordinates of $M(-1, -1)$ or $N(3, 1)$
			M1	for method to find gradient of MN or PR or for method to find column vector for MN or PR or for differences of x coordinates and differences of y coordinates for MN or PR
			A1	for gradients of MN and PR , ie $\frac{1}{2}$ oe or for column vectors of MN and PR , $\overline{MN} = \begin{pmatrix} 4 \\ 2 \end{pmatrix}$ and $\overline{PR} = \begin{pmatrix} 8 \\ 4 \end{pmatrix}$ or for differences of x coordinates and of y coordinates for MN and PR
			C1	for conclusion from reasoning and correct working

2	(22, 20)	P1	for process to find width or height of diagram eg $38 - 6 (= 32)$ or $36 - 7 (= 29)$	<p>Figures may be shown on the diagram</p> <p>If $(6 + 38) \div 2$ leads to an answer other than 22, award P2 only</p> <p>Award for P3 for $(22, y)$ or $(x, 20)$ or $x = 22$ or $y = 20$</p>
		P1	for process to find length of side of square eg " 32 " $\div 4 (= 8)$ or process to find half width of diagram eg " 32 " $\div 2 (= 16)$	
		P1	for process to find x coordinate eg $6 + 2 \times "8" (= 22)$ or $6 + "16" (= 22)$ or $(6 + 38) \div 2 (= 22)$	
		P1	for process to find y coordinate eg $36 - 2 \times "8" (= 20)$ or $36 - "16" (= 20)$ or $7 + "8" + "29" - 3 \times "8" (= 20)$	
		A1	cao SC: award 4 marks for $(20, 22)$	

3	(9, 8)	P1	for setting up an equation for one dimension (width) of the pattern eg $2b - a = 8$ oe or $2x + y = 8$ oe	<p>a and b are the width and length x is the difference between the length and width, y is the width of the rectangle</p> <p>Both values correct implies this mark</p> <p>Award 0 marks for a correct answer with no supportive working.</p>
		P1	for setting up an equation for the other dimension (height) of the pattern eg $2b + a = 16$ oe or $2x + 3y = 16$ oe	
		P1	(dep P2) for a full process to solve for both variables eg $4b = 24$, $b = 6$ and $12 - a = 8$, $a = 4$ or $8 = 2y$, $y = 4$ and $8 = 2x + y$, $x = 2$	
		P1	(dep P3) for a full process to find one of the coordinates of C eg $3 + 6 (= 9)$ or $4 + 4 (= 8)$ or $3 + 2 + 4 (= 9)$ or $4 + 4 (= 8)$	
		A1	cao	