Coordinates and Ratios Mark Scheme		
1(a)	(2,3)	[1]
1(b)	(0,0)	[1]
1(c)	(-0.5, 0.5)	[1]
2(a)	(11,9)	[1]
2(b)	(-4.5, -12)	[1]
2(c)	(-3,-5)	[1]
3	( 5 , 0) and (3 , -2)	[1] Correct coordinates for a square
	(1,4) and (-1,2)	[1] Correct coordinates for a square
4(a)	17 - 2 = 15 13 - 4 = 9	[1] Finding difference in <i>x</i> and <i>y</i>
	$15 \times \frac{2}{3} = 10$ ; $9 \times \frac{2}{3} = 6$	[1] Use of ratio to find the distance along the line
	2 + 10 = 12 4 + 6 = 10 (12, 10)	[1] Correct coordinates
4(b)	-21 - 0 = -21 -25 - 10 = -35	[1] Finding difference in x and y
	$-21 \times \frac{5}{7} = -15;  -35 \times \frac{5}{7} = -25$	[1] Use of ratio to find the distance along the line
	0 + (-15) = -15 10 + (-25) = -15 (-15, -15)	[1] Correct coordinates
5(a)	$A(-4,-5),  B(2,4) \\ 2 - (-4) = 6 \\ 4 - (-5) = 9$	[1] Distance along the line to C
	$6 \times \frac{1}{3} = 2  ; \qquad 9 \times \frac{1}{3} = 3$ (-2,-2)	[1] Allow use of graph to find answer.
5(b)	$C(-2, -2), \qquad B(2,4)$ CX: XB = 1:3 -2 - 2 = -4  ;  -2 - 4 = -6	[1] Use of ratio to find the distance along the line
	$4 \times \frac{1}{4} = 1$ ; $6 \times \frac{1}{4} = 1.5$	[1] Use of ratio to find the distance along the line
	-2 + 1 = -1 -2 + 1.5 = -0.5 (-1, -0.5)	[1] Correct coordinates

Turn over ►

6(a)	Change in $x = +20$ Change in $y = -8$ $20 \times \frac{3}{4} = 15$ $-9 \times \frac{3}{4} = -6$	[1] Distance along the line to <i>F</i>
	(15, -6)	[1] Coordinates of F
6(b)	AG: GF: FB = 1: 2: 1	[1] Use of ratio
6(c)	$A(0,0) and F(15,-6)$ Change in $x = +15$ Change in $y = -6$ $15 \times \frac{1}{3} = 5$ $-6 \times \frac{1}{3} = -2$	[1] Distance along the line to <i>G</i>
	(5, -2)	[1] Coordinates of G
7	X(5,-3)	[1] Coordinates of X
	Y(1, -7)	[1] Coordinates of Y
	Crosses $y$ – axis at – 8, $y$ – intercept $c = -8$	[1] Intercept
	y = x - 8	[1] Correct equation of the line
8	-1 $-2$ $-2$ $-3$ $-4$ $X$ $-5$ $Y$ $-6$ $-7$ $-8$ $Z$ $A$	
	X (2, -5)	[1] Coordinates of X
	Y (0, -5)	[1] Coordinates of Y
	Z (2, -9)	[1] Shape correctly drawn for final mark.

END