Question Number	Scheme	Marks
8 (a)	$AB = \sqrt{(13-1)^2 + (7-1)^2} = \sqrt{180} \ \left(= 6\sqrt{5}\right)$	M1A1 (2)
(b)	$x = 5, \ y = 5 \quad$ or $\quad (5,5)$	B1B1 (2)
(c)	Grad $AB = \dfrac{-6}{12} = -\dfrac{1}{2}$	M1
	Grad perp $-1 \div \left(-\dfrac{1}{2}\right) = 2$	A1
	$y - 5 = 2(x-5), \quad y = 2x - 5$	M1,A1 (4)
(d)	$x = 9 \quad y = d = 13$	B1 (1)
(e)	E is $(7,9)$	B1
	Area $ADBE = \dfrac{1}{2}\begin{vmatrix} 1 & 9 & 13 & 7 & 1 \\ 7 & 13 & 1 & 9 & 7 \end{vmatrix}$	M1A1ft
	$\dfrac{1}{2}\big((1\times13 + 9\times1 + 13\times9 + 7\times7) - (1\times9 + 7\times1 + 13\times13 + 9\times7)\big)$	M1
	$= -30$	
	Area $= 30$ units^2	A1 (5)
	ALT for (e):	
	$CD = 4\sqrt{5}$	B1
	Area $= \Delta ADB - \Delta AEB, \ = \dfrac{1}{2}AB \times \dfrac{1}{2}CD$	M1,A1
	Area $= \dfrac{1}{2} \times 6\sqrt{5} \times 2\sqrt{5}, = 30$	M1A1
		[14]