Question number	Scheme	Marks
2 (a)	Gradient $= \dfrac{4+1}{3+7} = \dfrac{1}{2}$	M1
	$y+1 = \dfrac{1}{2}(x+7)$	M1
	$x - 2y + 5 = 0$	A1 (3)
(b)	$AB = \sqrt{10^2 + 5^2} = 5\sqrt{5}$ $AC = \sqrt{(-7--3)^2 + (7--1)^2} = 4\sqrt{5}$	M1
	$k = \dfrac{5}{4}$	A1 (2)
(c)	$-2 = \dfrac{7-p}{-3-3}$	M1
	$12 = 7 - p$	dM1
	$p = -5$	A1 (3)
		Total 8 marks

Part	Mark	Notes
(a)	M1	For finding the gradient of *AB*
	M1	For a fully correct method for finding the equation of a straight line. If $y = mx + c$ is used, then they must find a value for c for the award of this mark.
	A1	For $x - 2y + 5 = 0$ in the required form. Accept the terms in any order provided they are all on one side of the equation with the other $= 0$ e.g., $-2y + x + 5 = 0$ or $2y - x - 5 = 0$ etc
(b)	M1	For using Pythagoras to find both *AB* **and** *AC* $AB = \sqrt{(7--3)^2 + (4--1)^2} = 5\sqrt{5}$ and $AC = \sqrt{4^2 + 8^2} = 4\sqrt{5}$
	A1	For $k = \dfrac{5}{4}$
(c)	M1	Obtains an equation using the perpendicular of their gradient from (a) and the point $(3, p)$ $$-2 = \frac{7-p}{-3-3}$$
	dM1	For a linear equation in p $$12 = 7 - p$$
	A1	For $p = -5$
	ALT	
	M1	Finds the equation of the perpendicular using their gradient form part (a) $y - 7 = -2(x+3) \Rightarrow y = -2x + 1$
	dM1	Substitutes $x = 3$ into their equation of the perpendicular to find a value for y
	A1	For $p = -5$