1	$b = \dfrac{2}{3}a + 2$	P1	for process to rearrange the equation to give y in terms of x eg $y = \dfrac{7-3x}{2}$ or $y = -\dfrac{3}{2}x + \left(\dfrac{7}{2}\right)$ or $m = -\dfrac{3}{2}$	
		P1	for using their gradient in $mn = -1$	
		P1	for showing a process to find the gradient of PQ eg $\dfrac{b-4}{a-3}$ **OR** for substituting $x = 3$ and $y = 4$ in $y = \text{“}\dfrac{2}{3}\text{”}x + c$	
		P1	(dep P3) for forming an equation in a and b eg $\dfrac{b-4}{a-3} = \text{“}\dfrac{2}{3}\text{”}$ or $b = \text{“}\dfrac{2}{3}\text{”}a + \text{“}2\text{”}$ **OR** correct equation in terms of x and y eg $y = \dfrac{2}{3}x + 2$	$y - 4 = \dfrac{2}{3}(x-3)$ gets P4
		A1	for $b = \dfrac{2}{3}a + 2$ oe	Accept 0.66 or 0.67 oe for 2/3

2	$y = -\dfrac{3}{4}x - \dfrac{11}{4}$	M1	for identifying gradient of $\dfrac{4}{3}$	Ignore constant term
		M1	for beginning a method to find the gradient of the perpendicular line eg $\dfrac{4}{3} \times m = -1$ **or** identifies gradient of perpendicular line as $-\dfrac{3}{4}$	Can ft providing gradient is clearly stated
		A1	for $y = -\dfrac{3}{4}x - \dfrac{11}{4}$ or any equivalent equation	$4y + 3x = -11$ $y + 5 = -\dfrac{3}{4}(x-3)$

3	9.75	P1	process to find the gradient of **L** $\left(= -\dfrac{3}{2}\right)$	
		P1	process to find the gradient of the perpendicular line **M** eg use of $-\dfrac{1}{m}$ or states gradient as $\dfrac{2}{3}$ or $y = \dfrac{2}{3}x + c$	
		B1	(indep) gives y coordinate of $B = 8.5$ oe	Could be indicated other ways, eg 8.5 on the y axis of a diagram
		P1	(dep P2) process to find x coordinate of $C (= 3)$ or y coordinate of $C (= 4)$ eg the first stage of solving equations or using elimination by substitution, to find a coordinate of C.	ft their linear equation for M with L; allow some error in manipulation of these linear equations as long as the overall process is correct.
		A1	9.75 oe	Award 0 marks for a correct answer with no supportive working.

4	$y = -\dfrac{1}{3}x + 8$	M1	for a method for finding the gradient of L₂ eg use of $-\dfrac{1}{m}$ or $-\dfrac{1}{3}$	
		M1	(dep) for substitution of (9, 5) into $y = \text{“}-\dfrac{1}{3}\text{”}x + c$	
		A1	for $y = -\dfrac{1}{3}x + 8$ oe	$y - 5 = -\dfrac{1}{3}(x-9)$ gets M2A1

5	(a)	(9, 7.5)	M1	for x coordinate = PO (6) $\times \dfrac{3}{2}$ (=9) **or** y coordinate = OQ (3) $\times \dfrac{5}{2}$ (= 7.5) **or** PO (6) $\times \dfrac{5}{2}$ (=15) **or** OQ (3) $\times \dfrac{3}{2}$ (= 4.5)	
			A1	cao	
	(b)	$y = -2x + 3$	P1	for process to find the gradient of the line, eg $3 \div 6$ (=0.5) **or** $y = mx + 3$	Could use P and R or Q and R as ft from (a)
			P1	for process to find gradient of perpendicular eg $-1 \div$ [gradient of PQ] (=−2)	
			A1	for $y = -2x + 3$ oe	