

Question	Scheme	Marks	AOs
4(a)		B1 B1 B1	1.1b 1.1b 2.2a
		(3)	
(b)	Correct strategy for x leading to $x = \dots$	M1	3.1a
	$y = \left(1 - \frac{k}{2} + k\right) \left(2 - 1 + \frac{k}{2}\right)$	M1	1.1b
	$x = \frac{2-k}{2} \quad y = \left(1 + \frac{k}{2}\right)^2 \text{ o.e.}$	A1	1.1b
		(3)	

(6 marks)

Notes

(a)

B1: Correct shape

B1: Correct x intercepts or correct y intercepts

B1: Fully correct diagram with correct intercepts and with the maximum in quadrant 2

(b)

M1: Correct strategy for x coordinate of the stationary point. May be found by calculus e.g.
$$\frac{dy}{dx} = 2 - 2x - k = 0 \Rightarrow x = \frac{2-k}{2} \text{ or by completing the square or by symmetry}$$
M1: Correct attempt to find the y coordinate

A1: Correct coordinates