Question	Scheme	Marks	AOs
2(a)	$x^2+y^2-12x+10y=0$		
(i)	Centre $=(6,-5)$	B1	1.1b
(ii)	$(x-6)^2+(y+5)^2=61$	M1	1.1b
	Radius $=\sqrt{61}$	A1	1.1b
		(3)	
(b)	$k=-5+\sqrt{61}$	B1ft	2.2a
		(1)	
(c)	At Q, $y=-10$	B1	1.1b
	Area $=\frac{1}{2}\times"10"\times"6"$	M1	3.1a
	Area $=30$	A1	1.1b
		(3)	
			(7 marks)

Notes:

(a)(i)

B1: Centre $=(6,-5)$

(a)(ii)

M1: Attempts to complete the square to achieve $(x\pm 6)^2+(y\pm 5)^2 \pm ... = ...$

A1: Radius $=\sqrt{61}$

(b)

B1ft: Deduces that $k="-5"+"\sqrt{61}"$ only, where -5 is the *y* coordinate of their centre and $\sqrt{61}$ is their radius. The *y* coordinate of the centre must be negative for the follow through.

(c)

B1: y coordinate of Q is -10 seen or implied

M1: A complete method to find the area using the *x* coordinate of their centre and their *y* coordinate for Q. Look for $\frac{1}{2}\times"10"\times"6"$.

A1: 30 only.