Question	Answer	Marks	AO	Guidance
14	Differentiate wrt x	M1*		Attempt to differentiate implicitly. Must have at least one term involving $y\frac{dy}{dx}$
	$2(x^2+y^2)\left(2x+2y\frac{dy}{dx}\right)=2\left(2x-2y\frac{dy}{dx}\right)$	M1		Uses the chain rule for $(x^2+y^2)^2$
		A1(dep)		At least two correct terms
		A1		Fully correct and no extra terms
	Alternative method $x^4+2x^2y^2+y^4=2x^2-2y^2$ Differentiate wrt x $4x^3+4xy^2+4x^2y\frac{dy}{dx}+4y^3\frac{dy}{dx}=4x-4y\frac{dy}{dx}$	M1* M1 A1(dep) A1		Attempt to expand and differentiate implicitly Must have at least one term involving $y\frac{dy}{dx}$ Uses product rule for term in x^2y^2 At least two correct terms Fully correct and no extra terms
	At stationary point $\frac{dy}{dx}=0$ so equation becomes $2(x^2+y^2)(2x)=4x$	M1	1.1	Substitutes $\frac{dy}{dx}=0$ and attempt to simplify
	[At stationary point $x\neq 0$] so $x^2+y^2=1$ So the stationary points lie on the circle centre (0, 0) radius 1	A1	2.2a	**AG** Correct equation seen with clear link between the equation and the geometry. www
		[6]		Note any error in term involving $\frac{dy}{dx}$ will give correct equation at the end but full credit will not be given.