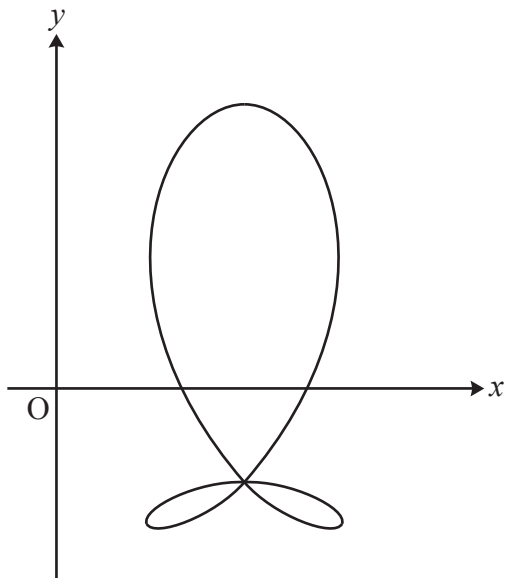


12 The diagram shows the curve with parametric equations

$$x = \sin 2\theta + 2, \quad y = 2 \cos \theta + \cos 2\theta, \quad \text{for } 0 \leq \theta < 2\pi.$$



(a) In this question you must show detailed reasoning.

Determine the exact coordinates of all the stationary points on the curve.

[8]

(b) Write down the equation of the line of symmetry of the curve.

[1]