

Curve Tracing

B.Sc. Part I

Tracing of some well-known curve in Cartesian co-ordinates.

→ Trace the curve, the equation of which is $x^{2/3} + y^{2/3} = a^{2/3}$ (Astroid)

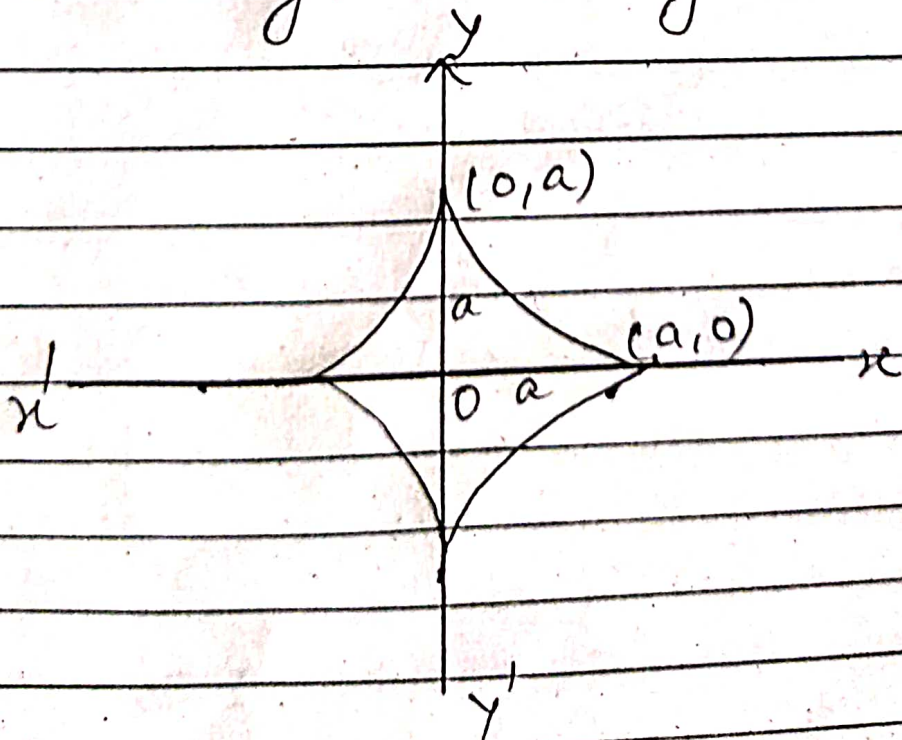
Here the index of power is a fraction

Cubing both sides

$$x^2 + y^2 + 3x^{2/3}y^{2/3}a^{2/3} = a^2$$

$$(a^2 - y^2 - x^2)^3 = 27x^2y^2a^2$$

We see that the curve is symmetrical about both axes. It does not pass through the origin



Put $x=0$ $y = \pm a$

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There is no asymptote as the curve is closed.

The curve is as shown above.