

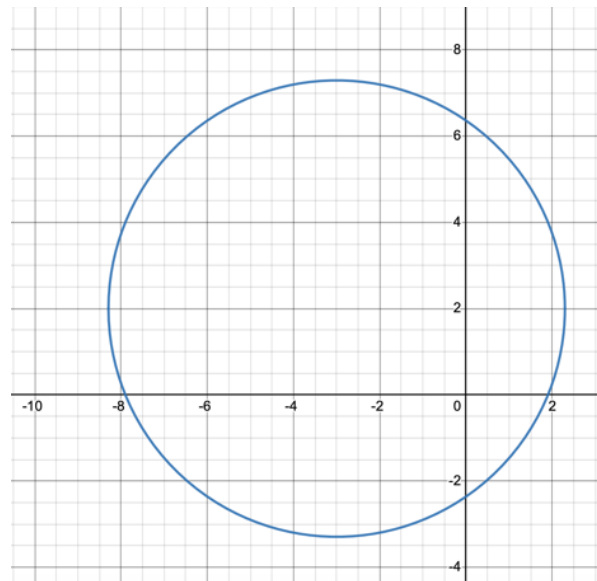
Implicit Differentiation

Performing a Derivative on a Relation

Determine $\frac{dy}{dx}$.

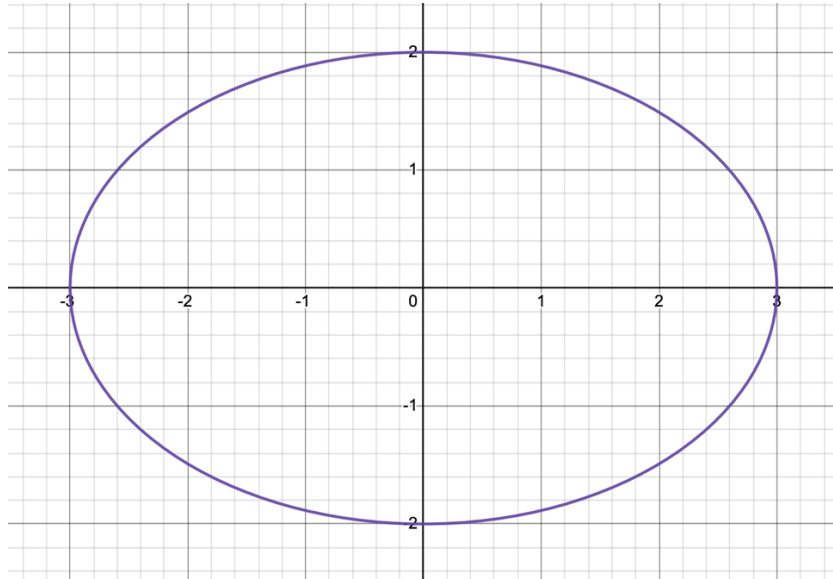
Circle

$$x^2 + y^2 + 6x - 4y = 15$$



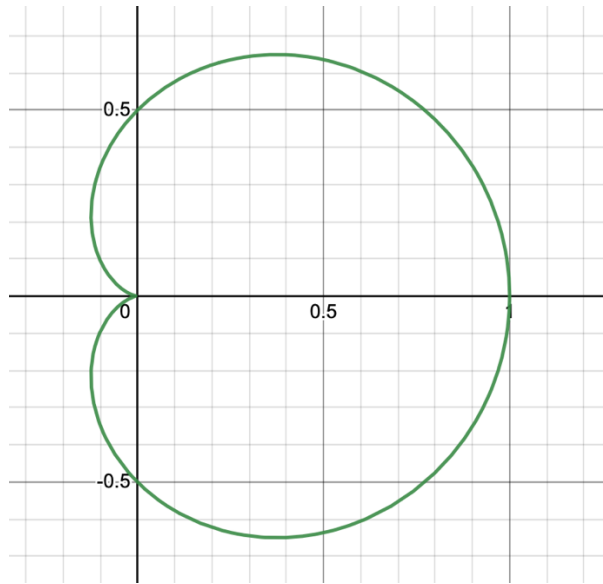
Ellipse

$$4x^2 + 9y^2 = 36$$



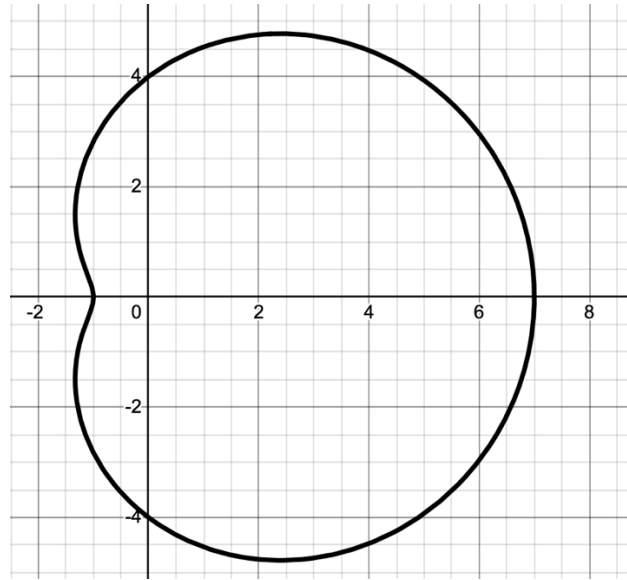
Cardioid

$$x^2 + y^2 = (2x^2 + 2y^2 - x)^2$$



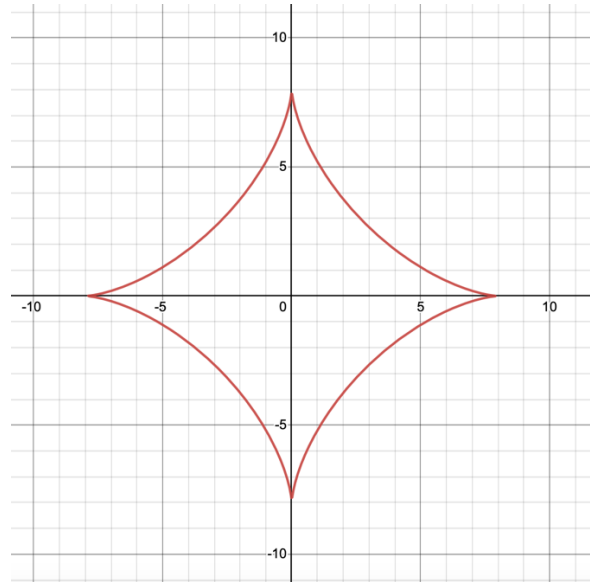
Limicon

$$(x^2 + y^2 - 3x)^2 = 16(x^2 + y^2)$$



Astroid

$$x^{2/3} + y^{2/3} = 4$$



Lemniscate

$$(x^2 + y^2)^2 = 4(x^2 - y^2)$$

