Practice implicit differentiation. If you are curious, try to plot these curves on a computer (or google it).

1. [10] (cardioid) Let \((x^2 + y^2)^2 + 4x(x^2 + y^2) - 4y^2 = 0\) be a curve. Find \(y'\).

2. [10] (astroid) Let \(x^{2/3} + y^{2/3} = 2\) be a curve. Find the points on the curve where the tangent line is parallel to \(y = -x\).

3. [20] (quadrifolium) Let \((x^2 + y^2)^3 = (x^2 - y^2)^2\) be a curve. Find the points on the curve where the normal line is parallel to \(y = 0\).

4. [10] Let \(x^y = xe^{2xy}\), find the normal line at \((1, 0)\).