GROUP WORK 1, SECTION 3.6

Implicit Curves

Consider the implicit function $\sin x \cos y = 0$.

1. Without using technology, graph this function. You have to think carefully, but you can get it.

2. If you have access to technology that can graph implicit functions, have it graph this function. Do you get a good graph?

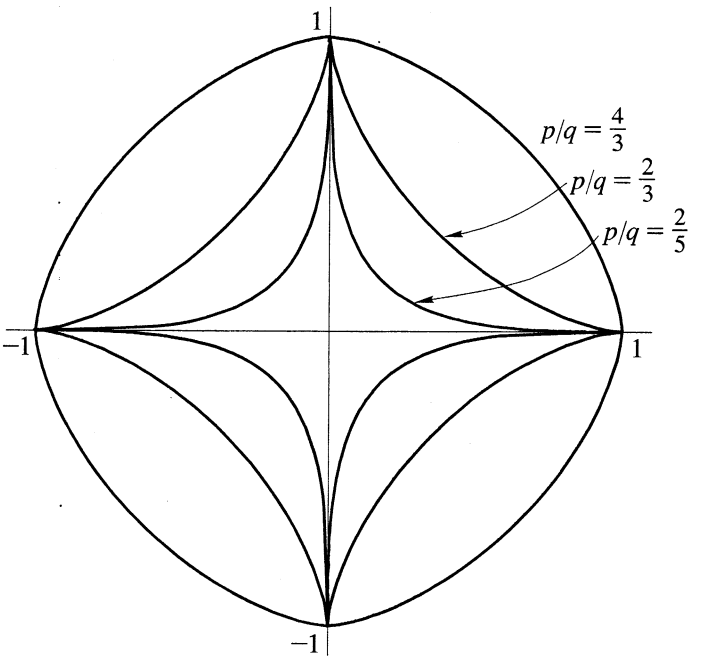
3. Use implicit differentiation to compute $\frac{dy}{dx}$. Does your graph confirm or contradict your answer?

GROUP WORK 2, SECTION 3.6

Circles and Astroids

1. Consider the "flat" circle $x^6 + y^6 = 1$. At what point(s) is the slope of the tangent line equal to 1? Whe is it equal to -1?

2. Below are some curves $x^{p/q} + y^{p/q} = 1$, where p is even and q is odd. These curves are sometimes calle *astroids* when $p/q < 1$.



At what point(s) is the slope of the tangent line equal to 1 or -1 if $p/q = \frac{4}{3}$? How about if $p/q = \frac{2}{5}$?