1. Find and classify all critical points of $f(x, y) = x^4 + y^4 - 3xy - x + 1$

   Remember the WolframAlpha syntax for solving a system of equations:

   ```
   solve{ -10y-8x=0, -10x+3-4y^3=0 } reals
   ```

   Note this isn't the system you want to solve for this problem

2. Let $f(x) = x^2 - 6x + 10$ and $g(x) = -x^2 - 2x - 3$. Find the points on the graphs of $y = f(x)$ and $y = g(x)$ that are closest to each other.
   You can break this down into several steps:

   (a) Graph $y = f(x)$ and $y = g(x)$ to get a feel for what a reasonable answer may be

   (b) Let $(a, f(a))$ and $(b, g(b))$ be points on the graphs
   Write a function $h(a, b)$ that expresses the *square* of the distance between them

   (c) Find and classify the critical point(s) of $h(a, b)$

   (d) Now find the corresponding points on the graphs