1. Find $y'$, given $x^2 y - xy^2 + x^2 + y^2 = 0$

2. Find $y'$ and $y''$ for each of the following equations.
   (a) $x^2 - xy + y^2 = 3$
   (b) $x^3 + xy^3 = 2$
3. Find the equation of the tangent line to $\sqrt{x} + \sqrt{y} = 4$ at (4,4).

4. Find the slope of the tangent line at $(x_0, y_0)$ of:
   
   (a) $b^2x^2 + a^2y^2 = a^2b^2$

   (b) $b^2x^2 - a^2y^2 = a^2b^2$

   (c) $x^3 + y^3 - 6x^2y = 0$