

Implicit Differentiation and the Second Derivative Session 14

$$x^2 + 4y^2 = 1$$

$$2x + 8yy' = 0$$

$$y' = -\frac{x}{4y}$$

$$y'' = -\frac{y + xy'}{4y^2} = -\frac{1}{16y^3} = \pm \frac{1}{16\sqrt{1-x^2}}$$