Homework #9 Solutions

An ellipse is a circle that has been stretched in the horizontal and/or vertical directions. Consider the ellipse:

$$4x^2 + 9y^2 = 36$$

1. Determine y'.

$$8x + 18yy' = 0$$
$$18yy' = -8x$$
$$y' = -\frac{8x}{18y} = -\frac{4x}{9y}$$

2. Determine the equation of the tangent line at the point $(0, 2)$.

$$m = -\frac{4(0)}{9(2)} = 0$$

Thus, the tangent is a horizontal line: $y = 2$.