

$$15. \quad 4y^3 - 2 - \ln(xy) = 1 \quad \begin{matrix} x & y \\ (e, & 1) \end{matrix}$$

$$4y^3 - 2 - [\ln x + \ln y] = 1$$

$$4y^3 - 2 - \ln x - \ln y = 1$$

$$12y^2 y' - \frac{1}{x} - \frac{1}{y} \cdot y' = 0$$

$$xy(12y^2 y') - xy\left(\frac{1}{x}\right) - xy\left(\frac{y'}{y}\right) = xy(0)$$

$$12xy^3 y' - y - xy' = 0$$

$$12xy^3 y' - xy' = y$$

$$y'(12xy^3 - x) = y$$

$$y' = \frac{y}{12xy^3 - x}$$

$$m = \frac{1}{12e \cdot 1^3 - e}$$

$$m = \frac{1}{11e}$$

$$y = mx + b$$

$$1 = \frac{1}{11e}(e) + b$$

$$1 = \frac{1}{11} + b$$

$$1 - \frac{1}{11} = b$$

$$\frac{10}{11} = b$$

$$y = mx + b$$

$$y = \frac{1}{11e}x + \frac{10}{11}$$