

Quiz 9

Find an equation for the line tangent to the graph of $f(x) = (\ln x)^2$ at the point $(e, 1)$.

Solution. The derivative of f is $f'(x) = 2(\ln x) \cdot 1/x$, whose value at e is $2 \ln e \cdot 1/e = 2/e$. So the tangent line has the equation $y - 1 = 2/e \cdot (x - e)$, which can be simplified to $y = 2x/e - 1$.