1. $D_x\Big[\ \ln\big|\cos(x)\big|\ \Big] =$

2. $D_x\left[\ \Big(\ln\big|\sec(x)\big|\Big)^5\ \right] =$

3. $D_x\left[\ 4xe^{\sqrt{3x+1}}\ \right] =$

4. Find the equation of the tangent line to $f(x) = \dfrac{1}{2}\ln|x|$ at the point $\big(1, f(1)\big)$.

1. $D_x\left[\ \ln\left|x^6 - 5x^2 + 1\right|\ \right] =$

2. $D_x\left[\ 4xe^{\sqrt{3x+1}}\ \right] =$

3. $D_x\left[\ \left(\sec\left(\ln(x)\right)\right)^3\ \right] =$

4. Let $f(x) = \ln(x)$. Sketch and label the graphs of both $y = f(x)$ and $y = f'(x)$.