Another example below illustrates how a student did not initially apply the properties of logarithms in the beginning, which simplifies the question being asked. Because of this, the student did not correctly answer the question.

18. Let $f(x) = \ln \dfrac{x^4 e^{3x}}{\sqrt{x^2+1}}$. Then $f'(x)$ equals

(A) $\dfrac{4}{x} + 3 - \dfrac{x}{x^2+1}$ (B) $\dfrac{12x^3e^{3x}}{(x^2+1)^{-1/2}}$ (C) $\dfrac{\sqrt{x^2+1}}{x^4e^{3x}}$ (D) $\dfrac{x^4e^{3x}}{\sqrt{x^2+1}}$

(E) None of the above