a) What is \( \frac{d}{dx} \log x \cdot 7 \) ?

b) What is \( \frac{d}{dx} \sin^{-1}(x \ln(x^2+1)) \) ?

\( \text{Hint: take step by step, write them, will be messy, don't try to simplify.} \)

c) What is \( \int \cos \sqrt{x} \, dx \) ?

\( \text{Hint: } u = \sqrt{x} \text{ change var.} \)

d) Find the point on the parabola \( y = x^2 \) closest to the point (3,9).

\( \text{Hint: you will need to give a soln to a cubic.} \)

e) Find \( f'(x) \) and \( f^{-1}(x) \) if \( f(x) = 3 \ln(x^2) + 2 \).