Math 1552: Derivative Review Relay

Find the derivative of each function below. DO NOT SIMPLIFY YOUR ANSWER.

1. $f(x) = \sin(\tan^{-1}(\sqrt{x^3 + 5x - 2}))$

2. $g(x) = \dfrac{3x^{1/4}e^{1/x}}{(x^4 - \frac{1}{3x})^5(3x^2+2)^4}$

3. $h(x) = (\ln x)^x$

4. $k(x) = \log_2(\log_5(\log_6(8^{-3x})))$

5. $s(t) = t^2 \csc^3(5t)\sec^5(8t)$