1. Let $f(x) = \ln(x)$, $g(x) = x^2 + 3x$, and $h(x) = \cos(x)$.
   Find the following derivatives.

   (a) $(f \circ g)'(x)$

   (b) $(g \circ f)'(x)$

   (c) $(h \circ g)'(x)$

2. Find the derivative of each function.

   (a) $(3x^2 + 2)^{14}$

   (b) $\ln(\sin x)$

   (c) $(\sin(3x^2))^2$

   (d) $x^2 \sin(x^3)$

   (e) $\sqrt{\ln(x^2 + 2x)}$