1. Let $f(x)=\ln (x), g(x)=x^{2}+3 x$, and $h(x)=\cos (x)$. Find the following derivatives.
(a) $(f \circ g)^{\prime}(x)$
(b) $(g \circ f)^{\prime}(x)$
(c) $(h \circ g)^{\prime}(x)$
2. Find the derivatives of the following functions.
(a) $\left(3 x^{2}+2\right)^{14}$
(b) $\ln (\sin x)$
(c) $\left(\sin \left(3 x^{2}\right)\right)^{2}$
(d) $x^{2} \sin \left(x^{3}\right)$
(e) $\sqrt{\ln \left(x^{2}+2 x\right)}$
