7.2.11. By direct application of the Product Rule of Differentiation,

\[
\frac{d}{dx}[(x^2 + 1) \ln(x)] = (x^2 + 1) \cdot \frac{d}{dx}[\ln(x)] + \ln(x) \cdot \frac{d}{dx}[x^2 + 1] \\
= (x^2 + 1) \cdot \frac{1}{x} + \ln(x) \cdot (2x) \\
= \frac{x^2 + 1}{x} + 2x \ln(x)
\]