Worksheet 2: Chapter 1 (cont.)

1. Simplify the expressions.

\[
\frac{3^{10/3}}{3^{4/3}} \quad (\sqrt[3]{3})^{1/2} \cdot (\sqrt[12]{12})^{1/2} \quad \left(\frac{\sqrt{6}}{3}\right)^4
\]

2. Express the following in terms of \(\ln(5)\) and \(\ln(7)\).

\[
\frac{(\ln(175) + \ln(1/5))}{(\ln(49))}
\]

3. Simplify the expressions.

\[
\ln(e^{-x^2-y^4}) \quad \ln(e^{2\ln x})
\]
4. Solve for $y$.

\[ \ln(1 - 2y) = t \]

5. Find the exact value. Do not approximate.

\[ \sin^{-1} \left( \frac{\sqrt{3}}{2} \right) \]

6. Find the domain of the function

\[ g(x) = \ln |9 - x^2|. \]
7. Determine how much time it would take for your money to triple at an interest rate of 5% compounded annually.