This formula for the method of false position only works if \( f(x) \) is concave up or concave down.

\[
f''(x) = 2 + \frac{1}{x^2} > 0
\]

Thus \( f(x) \) is concave up.

\[
p_n = p_{n-1} - \frac{(p_{n-1} - p_0) \left[ \frac{(p_{n-1} - 2)^2 - \ln p_{n-1}}{(p_{n-1} - 2)^2 - \ln p_{n-1} - (p_0 - 2)^2 + t} \right]}{p_0 - 2 - \ln p_{n-1} - (p_0 - 2)^2 + t}
\]

Which endpoint should be used as a "false point"?

So the false point should be

\[
p_0 = 2
\]

\[
p_1 = 1
\]

Compute \( p_2 \) using the iteration above.

\[
p_2 = 1 - \frac{(1-2)(1-2)^2 - \ln 1}{(1-2)^2 - \ln 1 + \ln 2}
\]

\[
p_2 = 1 - \frac{1}{1 + \ln 2} = \frac{\ln 2 + 2}{\ln 2 + 1}
\]