1. [8 points] Parts a. and b. are unrelated.

   a. [4 points] Let \( f(x) \) and \( h(x) \) be functions given by the formulas:

\[
f(x) = \sqrt{1 + \pi \sqrt{x}} \quad \text{and} \quad h(x) = \sqrt{x}.
\]

You do not need to show work for this part.

(i) Find a formula for a function \( s(x) \) such that \( f(x) = s(h(x)) \).

   Answer: \( s(x) = \) ______________

(ii) Find a formula for a function \( r(x) \) such that \( f(x) = h(r(x)) \).

   Answer: \( r(x) = \) ______________

b. [4 points] Given the function \( K = g(c) \) below, find a formula for \( g^{-1}(K) \). Show all of your work.

\[
K = g(c) = \frac{\ln(c^{10}) - \ln(c^7)}{\log(10^4)}
\]

Answer: \( g^{-1}(K) = \) ______________