Suppose \( g_1, g_2, g_3 : [a, b] \to \mathbb{R} \) are continuous functions, and define a function \( G : [a, b] \times [a, b] \times [a, b] \to \mathbb{R} \) by

\[
G(s, t, u) = \sqrt{[g_1(s)]^2 + [g_2(t)]^2 + [g_3(u)]^2}.
\]

Prove that \( G \) is uniformly continuous.

Note: You may want to prove a lemma that the composition of uniformly continuous functions are uniformly continuous.