The (good) Broyden update formula is

\[ J_{k+1} = J_k + \frac{f(x^k)(s^k)^T}{\|s^k\|^2}, \quad s^k = x^{k+1} - x^k. \]

Argue that \( J^{k+1} \) is the minimal change from \( J^k \) in Frobenius norm that satisfies the secant condition

\[ J_{k+1}(x^{k+1} - x^k) = f(x^{k+1}) - f(x^k). \]