This segment is a simple linear algebra proof which shows that wavelet matrix multiplication is possible.

1. $L(AB) = L(A) \cdot L(B)$
2. ψ^{-1} is a linear operator
3. $\psi^{-1}(\psi(A) \cdot \psi(B)) = \psi^{-1}(\psi(A)) \cdot \psi^{-1}(\psi(B))$
4. $\psi^{-1}(\psi(A)) = A$
5. $\psi^{-1}(\psi(B)) = B$
6. Therefore: $AB = \psi^{-1}(\psi(A) \cdot \psi(B))$