Quiz 7, March 17, 2016

Let A be an $m \times r$ matrix and B be an $r \times n$ matrix. Prove that the column space of AB is contained in the column space of A.

Answer: Take v in the column space of AB. So there is a vector w in $\mathbb{R}^n$ with $v = ABw$. It follows that Bw is a vector in $\mathbb{R}^r$ and $A(Bw) = v$. In other words, v is in the column space of A.