Proposition 4

Let R be a $m \times n$ RREF matrix & let its right most column be a pivot column

If we solve the non-homogeneous system we get the last non-zero row's equation as

$$0x_1 + 0x_2 + \cdots + 0x_n = R_{kn}$$

$$0 = R_{kn}$$ (where R_{kn} is a non zero const. as it is a pivot pt.

which cannot be possible