6 The ith column sum of E is $\sum_{j=1}^{n} e_{ij}$ and the elements of the ith column of $I-E$ are the negatives of the elements of E, ~~exce~~ except for the ii-th, which is $1-e_{ii}$. So, the i-th column sum of $I-E$ is $1-\sum_{j=1}^{n} e_{ji} = 1-1=0$.

1.5pt

Now, $(I-E)^t$ has zero row sums, so the vector $x=[1\ 1 \ldots 1]^t$ solves $(I-E)^t x = 0$. This implies $\det(I-E)^t = 0$. But $\det(I-E)^t = \det(I-E)$, so $(I-E)p=0$ must have nontrivial (i.e non zero) solutions.