$$k_{nn} = \sum_{k'=1} k' P(k'|k) = \sum_{k'=1} k' \frac{k' P(k')}{\langle k \rangle} =$$

$$= \frac{1}{\langle k \rangle} \sum_{k'} k'^2 P(k') = \frac{\langle k^2 \rangle}{\langle k \rangle}$$

k' - degree of neighbour

$P(k|k)$ = P that degree of neighbour will be k' given the vertex of degree k

$P(k')$ = P that randomly chosen vertex has degree k'