(3) $\binom{m+n}{r} = \sum_{i=0}^{r} \binom{m}{i}\binom{n}{r-i}$

D-d. ind. względem m

1^0 $m=0$ $\quad \binom{n}{r} = \sum_{i=0}^{r} \binom{0}{i}\binom{n}{r-i}$

$i=0$

$\binom{n}{r} = \binom{0}{0}\binom{n}{r-i}$

$\binom{n}{r} = \binom{n}{r-0}$ ✓

2^0 Załóżmy, że $\binom{m+n}{r} = \sum_{i=0}^{r} \binom{m}{i}\binom{n}{r-i}$

Pokażę, że $\binom{m+1+n}{r} = \sum_{i=0}^{r} \binom{m+1}{i}\binom{n}{r-i}$