

## Binomialsatsen, sid 30

$$(a+b)^2 = a^2 + 2ab + b^2 \quad \text{i.a. kvadreringsregeln}$$

$$(a+b)^n = \sum_{k=0}^n \binom{n}{k} \cdot a^{n-k} \cdot b^k$$

$$\begin{aligned} n=2: (a+b)^2 &= \binom{2}{0} \cdot a^{2-0} \cdot b^0 + \binom{2}{1} \cdot a^{2-1} \cdot b^1 + \binom{2}{2} \cdot a^{2-2} \cdot b^2 = \\ &= \binom{2}{0} a^2 + \binom{2}{1} ab + \binom{2}{2} b^2 = a^2 + 2ab + b^2 \end{aligned}$$

$$\begin{aligned} n=3: (a+b)^3 &= \binom{3}{0} a^3 + \binom{3}{1} a^2 b + \binom{3}{2} ab^2 + \binom{3}{3} b^3 = \\ &= a^3 + 3a^2 b + 3ab^2 + b^3 \end{aligned}$$