

$$\frac{\frac{a}{b}}{\frac{b}{a}} = \frac{1}{\frac{1}{2 + \frac{1}{3}}} = \frac{1}{\frac{1}{2 + \binom{n}{k} \binom{n}{k}}} = \frac{1}{\frac{1}{2 + \binom{n}{k}^2}}$$