

A Slightly Better Upper Bound on $R(k)$

Exposition by William Gasarch

January 20, 2025

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We will use item (2) to improve the upper bound from item (1).

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$$\begin{aligned} R(a, b) &\leq R(a-1, b) + R(a, b-1) \\ &\leq \binom{a+b-1}{a-1} + \binom{a+b-1}{a} = \binom{a+b}{a}. \end{aligned}$$

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I prefer writing

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Answer on the Next Slide!

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Result (5) is the best known.