

Sum/Integral of the Week

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1 Details

This is **Week 1 (21/12/2025 to 26/12/2025)**. My solution, along with Week 2's S/IOTW, will be posted on 27/12/2025. I will also be sharing any interesting solutions that have been mailed to me. Good luck, and if you wish to share your solution with me, do mail it to vtnaveenmugundh18@gmail.com. Thanks!

2 S/IOTW

Prove that:

$$\sum_{k=1}^m \frac{\binom{m-1}{k-1}^2}{(2k-1)\binom{2m-2}{2k-2}} = \frac{2^{4m-3}}{m\binom{2m}{m}\binom{2m-2}{m-1}}$$