

**Problem statement\*** Prove that the series

$$1 + \frac{a+1}{b+1} + \frac{(a+1)(2a+1)}{(b+1)(2b+1)} + \frac{(a+1)(2a+1)(3a+1)}{(b+1)(2b+1)(3b+1)} + \dots$$

converges if  $b > a > 0$  and diverges if  $a \geq b > 0$ .

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\* This series occurs in a text first published in 1908 by Thomas John l'Anson Bromwich, M.A., Sc.D., F.R.S., "based on courses of lectures given at Queen's College, Galway". A knowledge of history is valuable for scholars in all fields!