I.3 Partial Sums

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The terms of each partial sum are [0.3017372402031455, 2.265783786554165, 6.43673439326058, 12.629511865962723, 20.568246249049704, 30.008336375409144, 40.74859958554669, 52.62517450432901, 65.503758963123, 79.27311946066322, 93.8400991283956, 109.1258483603549, 125.06297381134462, 141.59336288233044, 158.66650483467163, 176.2381797700046, 194.26942298186148, 212.72569783021865, 231.57622835681784, 250.7934556491872, 270.35259109523486, 290.2312462612731, 310.4091239346816, 330.86775841892836, 351.590295812569, 372.56130699518724, 393.76662755781626, 415.1932200780632, 436.8290550405552, 458.6630074064008], [1.010050167084168, 1.0110464574552878, 1.0110639082933028, 1.0110649008878063, 1.0110650085379667, 1.0110650260988017, 1.0110650298956234, 1.011065030904513, 1.0110650312183191, 1.0110650313288363, 1.0110650313718736, 1.0110650313900833, 1.0110650313983442, 1.0110650314023208, 1.0110650314043357, 1.011065031405403, 1.011065031405991, 1.0110650314063263, 1.0110650314065235, 1.0110650314066427, 1.0110650314067167, 1.0110650314067635, 1.011065031406794, 1.011065031406814, 1.0110650314068275, 1.0110650314068366, 1.011065031406843, 1.0110650314068474, 1.0110650314068506, 1.0110650314068528], and [1.4715177646857693, 2.6895353138152833, 3.4861284077011065, 3.944019379919461, 4.186585471886538, 4.30804432854319, 4.366404774338679, 4.393577247198782, 4.40591822760745, 4.41141161910871, 4.413816664022506, 4.414855035910218, 4.415298060473987, 4.415485154435785, 4.415563465429834, 4.415595988095328, 4.415609401493537, 4.415614899516225, 4.4156171406348, 4.415618049603547, 4.415618416599472, 4.415618564162334, 4.415618623270761, 4.415618646865352, 4.415618656253602, 4.4156186599781275, 4.415618661451678, 4.415618662033179, 4.4156186622621085, 4.415618662352036].
The first series will diverge, while the other two series will converge to 1.01106503140685 and 4.415618662 respectively. I used 30 terms to come to this conclusion because it is large enough to get a good idea of the behavior of the series.