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→ 2

$$Sx = x + 2x^2 + 3x^3 + \dots + nx^{n+1} + (n+1)x^{n+1}$$

$$S = 1 + 2x + 3x^2 + \dots + (n+1)x^n$$

$$Sx - S = -1 - x - x^2 - x^3 - \dots - x^n + (n+1)x^{n+1}$$

$$S(x-1) = \frac{-1(x^{n+1}-1)}{x-1} + (n+1)x^{n+1}$$

$$S = \frac{1-x^{n+1}}{(x-1)^2} + \frac{(n+1)x^{n+1}}{x-1}$$