

Solutions

2.1 $u_8 = 5 + (8-1) \times 3 = 26.$

2.2 $S_8 = 8[2 \times 5 + 7 \times 3] / 2 = 124.$

2.3 Since $|r| < 1$, $S_\infty = 12 / (1 - 0.5) = 24.$

2.4 False. The first term has index 1, so the exponent is $n-1$. A sequence is a list; a series is a sum. A geometric sequence can alternate in sign and still converge.

2.5 A The constant multiplier between consecutive terms of a geometric sequence.

3.1 Fixed point 6. Subtracting 6 gives $u_{n+1} - 6 = 0.5(u_n - 6)$, so $u_n = 6 - 2(0.5)^{n-1}$. Terms approach 6, so their infinite sum diverges; a convergent sequence need not give a convergent series.