

Solutions

Each answer shows the steps, then the **result**.

2.1

- $u_{10} = a + 9d = 3 + 9(4) = 39$

2.2

- $|r| < 1$

3.1 C

- $\binom{6}{2}(2)^2 = 15 \times 4 = 60$

3.2

(a)

- $S_{\infty} = \frac{a}{1-r} = 40 \Rightarrow \frac{24}{1-r} = 40 \Rightarrow 1-r = 0.6; r = 0.4$

(b)

- $S_3 = \frac{24(1-0.4^3)}{1-0.4} = \frac{24(0.936)}{0.6} = 37.44$

3.3

- $S_n = \frac{n}{2}(2a + (n-1)d) = 440 \Rightarrow \frac{n}{2}(10 + 3(n-1)) = 440; 3n^2 + 7n - 880 = 0;$
 $(3n + 55)(n - 16) = 0; n = 16$ (reject negative)