

Solutions

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

2.1

- $a = 5, r = \frac{1}{3}$

2.2

- $\frac{5}{1 - 1/3} = \frac{5}{2/3} = \frac{15}{2}$

2.3

- No — $|r| = \frac{5}{4} > 1$, so it diverges

3.1 B

- converges iff $|r| < 1$

3.2

(a)

- $a = 6, r = -\frac{1}{2}$

(b)

- $\frac{6}{1 - (-\frac{1}{2})} = \frac{6}{3/2} = 4$

3.3

- First term ($n = 1$) is $4 \cdot \frac{2}{5} = \frac{8}{5}$, ratio $\frac{2}{5}$; $\text{sum} = \frac{8/5}{1 - 2/5} = \frac{8/5}{3/5} = \frac{8}{3}$