Math 3050 (Barsamian) Class Drill 5.1.1: Sequences

[1] (a) Let \( a_k = \frac{7-k}{7+k} \) for \( k \geq 1 \). Write the first five terms of the sequence.

(b) Let \( b_k = 2k^3 \) for \( k \geq 1 \). Write the first five terms of the sequence.

(c) Let \( c_k = (-1)^k \) for \( k \geq 1 \). Write the first five terms of the sequence.

(d) Let \( d_k = \frac{(-1)^k}{3^k} \) for \( k \geq 0 \). Write the first five terms of the sequence.

[2] (a) Find an explicit formula for the sequence that begins \(-1, 1, -1, 1, \ldots\)

(b) Find an explicit formula for the sequence that begins \(1, \frac{-1}{2}, \frac{1}{4}, \frac{-1}{8}, \ldots\)

(c) Find an explicit formula for the sequence that begins \(\frac{1}{4}, \frac{2}{9}, \frac{3}{16}, \frac{4}{25}, \frac{5}{36}, \ldots\)

(d) Find an explicit formula for the sequence that begins \(-1, 3, -9, 27, -81, \ldots\)