Problem 1:

Give the first 5 terms of the sequence given by

\[ a_n = \frac{4n + 2}{3n + 7} \]

starting at \( n=1 \).

Problem 2:

Does the following sequence converge or diverge? If it is convergent, to what does it converge?

\[ a_n = \frac{5n-1}{8n+3} \]

Problem 3:

Give an example of a divergent sequence that is bounded