1. (4 points) Consider the sequence of triangular numbers defined by the function $t_n = \frac{n(n + 1)}{2}$.

(a) Find the first 5 terms of the sequence $a_n = \left\{ \frac{2}{t_n} \right\}$.

(b) Determine the limit of the sequence $a_n$ with a picture or with algebra.

(c) List all of the following words that correctly describe the sequence $a_n$: alternating, bounded from above, bounded from below, strictly increasing, strictly decreasing, convergent, divergent.
2. (3 points) Find the general term $b_n$ of the sequence \( \{0, -\frac{1}{3}, \frac{8}{5}, -\frac{27}{7}, \frac{64}{9}, \ldots\} \)

3. (3 points) Solve: \( \sqrt{2x + 6} - x = -1 \)