

... problem continued from the previous page.

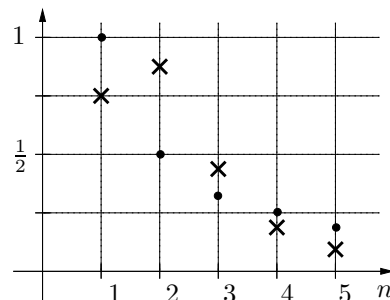
(c) [4 points of 12] For $\sum \frac{n}{2n^3-1}$:

i. [2 points of 4] What is a good test to determine the convergence of this series? Explain, in 1–2 sentences only, why this is.

ii. [2 points of 4] Determine if this series converges, diverges, or if we can't tell.

5. [8 points] Let a_n and b_n be the two sequences shown in the figure to the right. The sequence $a_n = \frac{1}{n}$ is shown with solid dots (\bullet) and the sequence b_n is shown with crosses (\times). For $5 \leq n < \infty$, $0 < b_n < a_n$.

(a) [4 points of 8] Does the sequence b_n converge, diverge, or can we not tell? Explain in one or two sentences. If it converges, indicate the value to which it converges.



(b) [4 points of 8] Does the series $\sum b_n$ converge, diverge, or can we not tell? Explain in one or two sentences. If it converges, indicate the value to which it converges.