

Announcements

Did you request a Quiz #2 regrade?

- I have your paper here—come claim it (with student ID)

WeBWorK #8 is now open

- Due Wednesday, March 8 at 9pm

You can retrieve your Quiz #3 online, later this evening

- Go to quizzes web page, click the link, follow instructions
- If you want a quiz regrade, follow the instructions on the quizzes web page

Quiz #4 will take place here on Friday, March 10

- Covers material from Units 7–8

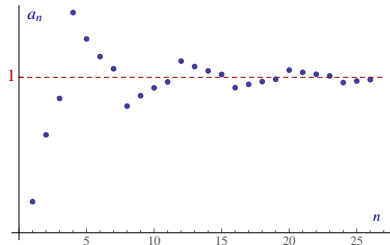
Friday, March 3

Clicker Questions

Clicker Question 1

Graph of a sequence

Based on the terms of the sequence you can see, does $\{a_n\}$ converge to 1 or not?



- A. no, because there's no formula for the values
- B. **yes, because the values will get as close to 1 as we like if we go far enough**
- C. no, because some values are above 1 while other values are below 1
- D. yes, because each value is closer to 1 than the previous value
- E. no, because some values are farther away from 1 than previous values

Clicker Question 2

Will this problem send you to the hospital?

Evaluate $\lim_{n \rightarrow \infty} \frac{\log n}{n^{1/9}}$.

- A. converges to 9
- B. diverges
- C. converges to $1/9$
- D. converges to 1
- E. **converges to 0**

Using l'Hôpital's Rule

It suffices to calculate $\lim_{x \rightarrow \infty} \frac{\log x}{x^{1/9}}$, which is an $\frac{\infty}{\infty}$ indeterminate form. Its limit is therefore equal to

$$\begin{aligned}\lim_{x \rightarrow \infty} \frac{(\log x)'}{(x^{1/9})'} &= \lim_{x \rightarrow \infty} \frac{1/x}{x^{-8/9}/9} \\ &= \lim_{x \rightarrow \infty} \frac{9}{x^{1/9}} = 0.\end{aligned}$$