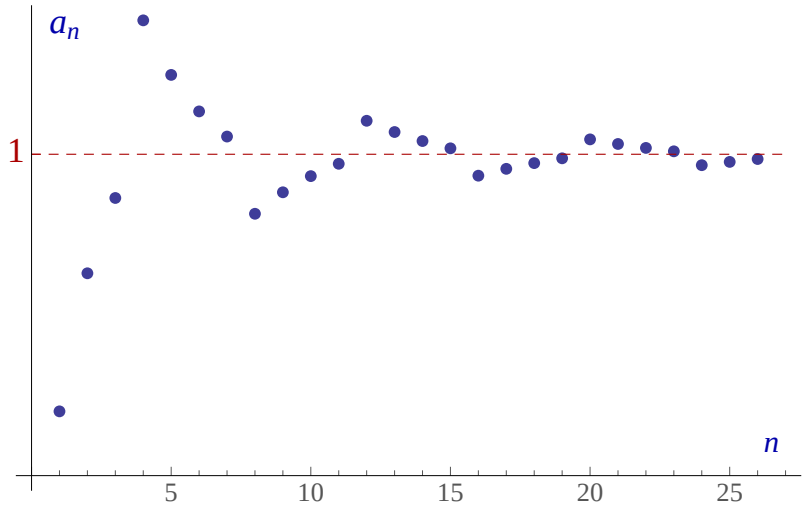
Monday, March 2

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

Functions and sequences

If a function $f(x)$ is defined for all positive real numbers, we can consider the sequence $\{f(n)\} = \{f(1), f(2), f(3), \dots\}$. What can we say about the relationship between the limit of the function $\lim_{x\to\infty} f(x)$, and the limit of the sequence $\lim_{n\to\infty} f(n)$?

A. If $\lim_{n\to\infty} f(n)$ converges, then $\lim_{x\to\infty} f(x)$ converges to the same value.

B. $\lim_{x\to\infty} f(x)$ converges to a value exactly when $\lim_{n\to\infty} f(n)$ converges to the same value.

C. There is no reliable relationship between $\lim_{x\to\infty} f(x)$ and $\lim_{n\to\infty} f(n)$.

D. $\lim_{x\to\infty} f(x)$ diverges exactly when $\lim_{n\to\infty} f(n)$ diverges.

E. If $\lim_{x\to\infty} f(x)$ converges, then $\lim_{n\to\infty} f(n)$ converges to the same value.