childsmath

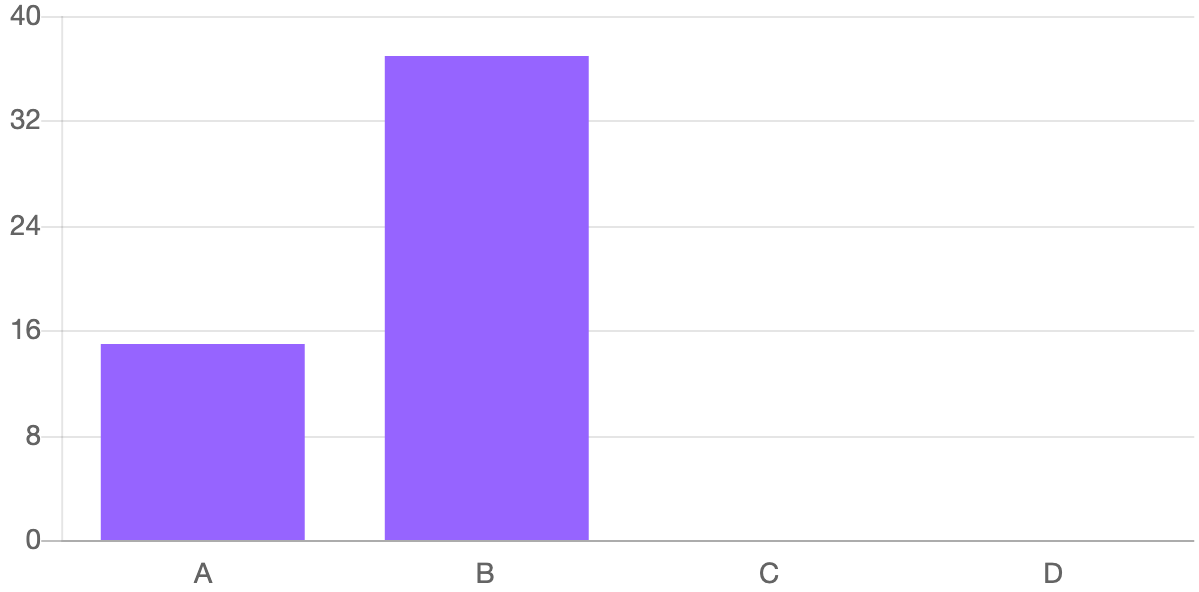
$$\int_M d\omega = \int_{\partial M} \omega$$

Math 3A03
Poll Results

Assignment 4: Function sequences

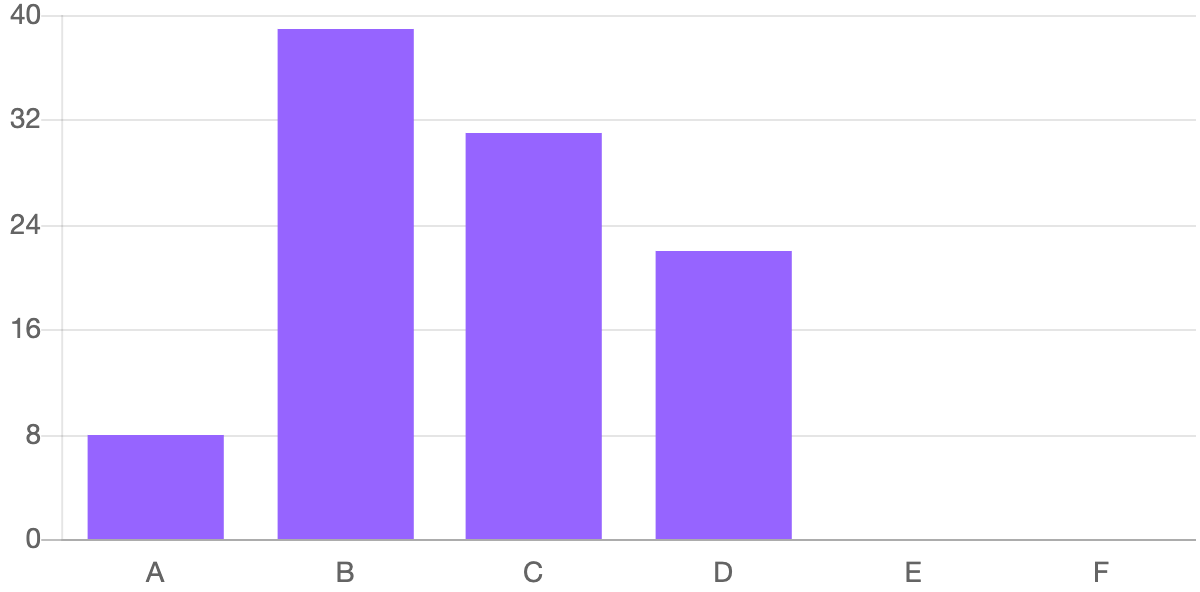
Question #1 Considering $f_n(x) = \sqrt[n]{x}$ on $[0, 1]$, which of the following statements are true?

(A) $\{f_n\}$ does not converge;
(B) $\{f_n\}$ converges pointwise;
(C) $\{f_n\}$ converges uniformly;
(D) I have not had sufficient time to think about this yet.



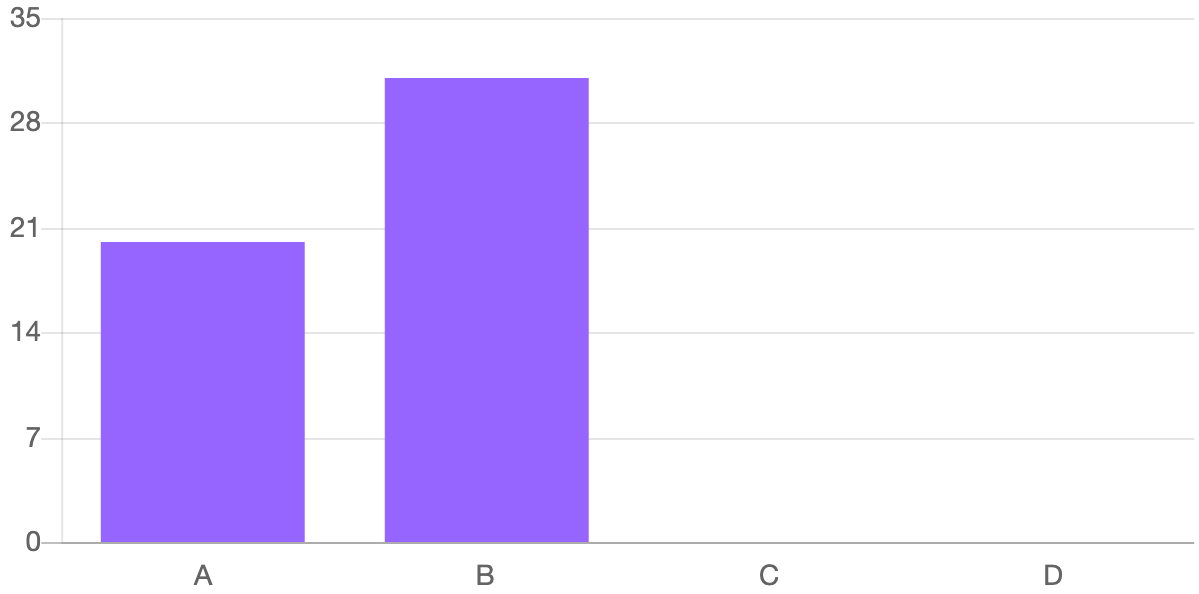
Question #2 Considering $f_n(x) = 0$ if $x \leq n$ and $f_n(x) = x - n$ if $x \geq n$, on $[a, b]$ and on $\mathbb{R}$, which of the following statements are true?

(A) $\{f_n\}$ does not converge;
(B) $\{f_n\}$ converges pointwise on $[a, b]$;
(C) $\{f_n\}$ converges pointwise on $\mathbb{R}$;
(D) $\{f_n\}$ converges uniformly on $[a, b]$;
(E) $\{f_n\}$ converges uniformly on $\mathbb{R}$;
(F) I have not had sufficient time to think about this yet.



Question #3 Considering $f_n(x) = \dfrac{e^x}{x^n}$, $\text{on } (1, \infty)$, which of the following statements are true?

(A) $\{f_n\}$ does not converge;
(B) $\{f_n\}$ converges pointwise;
(C) $\{f_n\}$ converges uniformly;
(D) I have not had sufficient time to think about this yet.



Question #4 Consider the series

$$\sum_{n=1}^{\infty} \frac{x}{n(1+nx^2)} .$$

Which of the following statements are true about this series?

(A) does not converge for any $x \in \mathbb{R}$;
(B) converges pointwise on a non-empty set but not on all of $\mathbb{R}$;
(C) converges pointwise on $\mathbb{R}$;

(D) converges uniformly on on a non-empty set but not on all of $\mathbb{R}$;
(E) converges uniformly on $\mathbb{R}$;
(F) I have not had sufficient time to think about this yet.