The quiz is scored out of 10 points.

- Series: for the following series, determine whether the given series converges or diverges (2 points each).

$\sum_{k=7}^{\infty} \frac{5}{k^{2/3}}$	$\sum_{k=7}^{\infty} \frac{5k^3+3k}{k!}$	$\sum_{k=7}^{\infty} k \sin\left(\frac{1}{k}\right)$	$\sum_{k=7}^{\infty} \frac{k^2+5}{3k^3+1}$	$\sum_{k=7}^{\infty} \frac{\sin(2^k)+1}{2^k+1}$

- (2 points) Given a series $\sum_{k=1}^{\infty} a_k$, define a sequence $\{b_n\}$ such that the series converges if an only if the sequence $\{b_n\}$ does.