Name: _____ Mark: _____

Mini-math AP Calculus BC: Friday, September 24, 2021 (15 minutes)

1. (1 point) Suppose S_n is the nth partial sum of the infinite series $\sum_{n=1}^{\infty} a_n$, where $a_n = \sin(n\pi/6)$. What is $S_{61} - S_{60}$?

2. (1 point) True or false: if $\lim_{n\to\infty} a_n = 0$, then $\sum_{n=1}^{\infty} a_n$ converges.

3. (1 point) For what values of k does $\sum_{n=1}^{\infty} 2^{kn}$ converge?

4. (2 points) If $0 < |a| < b^2$, compute $\sum_{k=1}^{\infty} b\left(\frac{a}{b^2}\right)^k$.