Quiz 12 — MA16020 — February 26, 2018

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1. (6 points) Determine whether each of these geometric series converges or diverges.

   (a) $\displaystyle\sum_{n=1}^{\infty}\left(\frac{3}{2}\right)^n$ (b) $\displaystyle\sum_{n=0}^{\infty}\frac{(-1)^n}{1000}$ (c) $\displaystyle\sum_{n=2}^{\infty}\frac{7^n}{3^{(2n)}}$

2. Let $S = 6 - 2 + \frac{2}{3} - \frac{2}{9} + \ldots$

   (a) (3 points) Write S in summation notation, starting with $n = 0$.

   (b) (1 points) Find the value of S.