Quiz 10

1. (4 points) Find the 5th term in the sequence. Is the sequence a geometric sequence?

\[ a_1 = 2 \]
\[ a_2 = -\frac{2}{3} \]
\[ a_3 = \frac{2}{9} \]
\[ a_4 = -\frac{2}{27} \]
\[ a_5 = \]

Determine whether the following series converge or diverge. Give a reason to support your answer.

2. (2 points)

\[ \sum_{n=1}^{\infty} \frac{1}{n} \]

3. (2 points)

\[ \sum_{n=0}^{\infty} 2 \left( \frac{7}{6} \right)^n \]

4. (2 points)

\[ \sum_{n=1}^{\infty} \frac{5}{n^2} \]