

Review Problems

February 24, 2017

1. (Fall 2007, Exam 2, #12) $\sum_{j=0}^{\infty} \frac{1+2^j}{3^j} =$

2. (Fall 2009, Exam 3, #2) Evaluate $\sum_{n=0}^{\infty} \frac{2^n + 3^n}{5^n}$.

3. (Fall 2014, Exam 3, #2) Compute $\sum_{n=1}^{\infty} \frac{(-1)^n + 2^{n-1}}{3^n}$.

4. (Fall 2015, Exam 3, #3) Determine whether the series converges or diverges. If it is convergent, find its sum.

$$-4 + 3 - \frac{9}{4} + \frac{27}{16} - \frac{18}{64} + \dots$$

5. Evaluate $\sum_{n=3}^{\infty} \frac{3^n - 1}{4^n}$.

Answer: $5/3$

6. For which values of x does $\sum_{n=1}^{\infty} \frac{x-3}{4}$ exist? Evaluate the series.

Answer: If $-1 < x < 7$, the series is equal to $\frac{4}{1-x}$.