Name: _____ Mark: _____ / 15

Mini-math Div 3/4: Friday, February 14, 2025 (10.1-10.9) - (20 minutes)

1. (3 points) Determine whether the following series converges or diverges. If possible, write down the value of the series if it converges.

$$\sum_{n=0}^{\infty} \frac{n\sqrt{n} - n + 2}{\sqrt[3]{8n^7 + n^3 + 1}}$$

2. (3 points) Determine whether the following series converges or diverges. If possible, write down the value of the series if it converges.

$$\sum_{n=3}^{\infty} \frac{(n+1)2^n}{n!}$$

3. (3 points) Determine whether the following series converges or diverges. If possible, write down the value of the series if it converges.

$$\sum_{n=0}^{\infty} \frac{n(n+1)^3}{2n^4+1}$$

4. (3 points) Determine whether the following series converges or diverges. If possible, write down the value of the series if it converges.

$$\sum_{n=0}^{\infty} \frac{(-1)^n 5^n}{3^{2n+1}}$$

5. (3 points) Determine whether the following series converges or diverges. If possible, write down the value of the series if it converges.

$$\sum_{n=2}^{\infty} \frac{1}{n(\ln n)^2}$$