

Name _____

You must fully justify your answers.

1. (4 points) Determine if the following series converges or diverges. If the series converges, find its exact sum.

$$\frac{5}{3 \cdot 4} + \frac{5}{4 \cdot 5} + \frac{5}{5 \cdot 6} + \frac{5}{6 \cdot 7} + \cdots$$

2. (3 points) Determine if the following series converges or diverges.

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

3. (3 points) Rewrite the following repeating decimal as a series and then compute its sum as a simplified fraction.

$$0.21111111111111 \dots$$