

Each question is worth 5 points. Show good justification for full credit. Don't panic.

1. Find, correct to at least 4 decimal places, the first three partial sums of the series

$$\sum_{n=1}^{\infty} \frac{1}{n^3}$$

2. Determine the exact sum of the geometric series

$$5 - \frac{10}{3} + \frac{20}{9} - \frac{40}{27} + \dots$$