

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

$$\frac{1}{2(1)-1} = \frac{1}{1}$$

$$\frac{1}{2(2)-1} = \frac{1}{3} + 1$$

$$\frac{1}{2(3)-1} = \frac{1}{5} + \frac{1}{3} + 1$$

$$\sum_{n=1}^{\infty} \frac{1}{2n-1}$$

$$S_1 = 1$$

$$S_2 = \frac{4}{3} \text{ or } 1.3333$$

$$S_3 = \frac{25}{15} \text{ or } 1.5333$$

Great

2. Determine the exact sum of the geometric series

$$\sum_{n=0}^{\infty} a \cdot r^n = \frac{a}{1-r}$$

$$3 - 2 + \frac{4}{3} - \frac{8}{9} + \frac{16}{27} + \dots$$

$$\frac{\frac{4}{3}}{-2} = -\frac{2}{3}$$

$$\frac{3}{1 - (-\frac{2}{3})} = \boxed{1.8}$$

Great