

Due: Friday, May 1st, 4:00pm

1. Estimate the sum of the following series by calculating S_{10} and S_{25} (approximate to four decimal places):

(a) $1 - \frac{1}{2} + \frac{1}{3} - \frac{1}{4} + \frac{1}{5} - \frac{1}{6} + \frac{1}{7} - \frac{1}{8} + \frac{1}{9} - \frac{1}{10} \dots$

(b) $1 + \frac{1}{3} - \frac{1}{2} + \frac{1}{5} + \frac{1}{7} - \frac{1}{4} + \frac{1}{9} + \frac{1}{11} - \frac{1}{6} + \frac{1}{13} + \frac{1}{15} - \frac{1}{8} \dots$

2. Do the series above appear to sum to the same value, or different values? Notice that the second series is really just the first series with its terms rearranged. What is going on here, and what does this tell you about conditional convergence?