Midterm 2

Math 253

March 1, 2024 Name:

Each problem is worth 10 points, for a total of 60 points.

You may use a hand-written sheet of notes.

Show your work where appropriate.

No calculators or cheating.

1. Does converge or diverge, and why?
2. Does converge or diverge, and why?
3. Does converge absolutely, conditionally, or not at all, and why?
4. Does converge or diverge, and why?
5. Find the third Taylor polynomial of the function , that is,  
   the polynomial of degree 3 whose value and first three derivatives at zero agree with those of f.
6. For which values of x does the series converge?