

Problem Set 3**Calculus 2****Due 4/8/16**

You are encouraged to work in groups of two to four on this assignment and make a single group submission. Each problem is worth 1 point. For full credit indicate clearly how you reached your answer. All work must be legible and submitted on clean paper without ragged edges.

1. Write the first half dozen terms of the Maclaurin series for $\cos x$.

2. Write the first half dozen terms of the Maclaurin series for $\sin x$.

3. Write the first dozen terms of the Maclaurin series for e^x .

4. Notice how those almost fit together?

□

5. Write the first half dozen terms of the MacLaurin series for $i \cdot \sin x$.

6. Write the first dozen terms of the MacLaurin series for $\cos x + i \cdot \sin x$.

7. Write the first dozen terms of the Maclaurin series for e^{ix} .

8. Notice how those really do fit together? □

9. Use your series from #7 to find the value of $e^{i\pi}$.

10. It's traditional at this point to say "We know that it's true, but we don't know what it means." □