## Problem Set 2 Calc $2 \quad$ Due 4/30/19

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 non-zero terms of the Maclaurin series for $\cos x$.
2. Write the first half dozen non-zero 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 non-zero 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 $e^{i x}$.
8. Notice how those really do fit together?
9. Use your result from \#8 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."
