## Known Maclaurin Series

Have these series memorized and know when to use them.

1. $\frac{1}{1-x}=\sum_{n=0}^{\infty} x^{n}$, with radius of convergence $R=1$
2. $e^{x}=\sum_{n=0}^{\infty} \frac{x^{n}}{n!}$, with radius of convergence $R=\infty$
3. $\cos x=\sum_{n=0}^{\infty} \frac{(-1)^{n} x^{2 n}}{(2 n)!}$, with radius of convergence $R=\infty$
4. $\sin x=\sum_{n=0}^{\infty} \frac{(-1)^{n} x^{2 n+1}}{(2 n+1)!}$, with radius of convergence $R=\infty$
5. $\arctan x=\sum_{n=0}^{\infty} \frac{(-1)^{n} x^{2 n+1}}{2 n+1}$, with radius of convergence $R=1$
