

Manipulating Series

1. Write a power series representation for the following functions.
Remember the convention in this class that $\sqrt{-1} = i$.

expression	Taylor Series
$\cos(x)$	
$\cos(ix)$	
$\sin(x)$	
$\sin(ix)$	
$i \sin(xi)$	
$\cos(ix) + i \sin(ix)$	
e^{ix}	

2. Are any of the Taylor series above equal? If so, which ones?

3. Do you recognize what formula you just proved?