

HOMEWORK #3, DUE WEDNESDAY OCTOBER 22ND

1. Expand $(1 - z)^{-m}$ in powers of z , where m is a positive integer.
2. Expand

$$\frac{2z + 3}{z + 1}$$

in powers of $z - 1$. What is the radius of convergence?

3. Find the values of $\sin i$ and $\cos i$.
4. Determine all values of 2^i , i^i , $(-1)^{2i}$.
5. Determine the real and imaginary parts of z^z .