Homework 11 (20 points each)

1. Derive Taylor Expansion

2. Derive Laurent Series

3. Expand $\frac{1}{z\,(1-z)}$ into Laurent Series

4. Calculate Taylor expantion of $\ln(1+z)$

5. Derive the Binomial expansion of $(1+z)^m$

6. Obtain Laurent expansion of $\frac{e^z}{z^2}$ about $z = 0$

7. Obtain Laurent expansion of $\frac{ze^z}{z-1}$ about $z = 1$

8. Obtain the Laurent expansion of $(z-1)\,e^{\frac{1}{z}}$ around $z = 0$