

Homework 15.

5.1 Done in class.

6.1 $z^{-1} - 1 + z - z^2 + \dots$. Residue=1.

6.2 $(z-1)^{-1} - 1 + (z-1) - (z-1)^2 + \dots$. Residue is 1.

6.3 $z^{-3} - z^{-1}/3! + z/5! - \dots$. Residue $-1/6$.

6.4 $z^{-2} + 1/2! + z^2/4! + \dots$. Residue is 0.

6.5 $(e/2)(z-1)^{-1} + 1/2 + (z-1)/4 + \dots$. Residue = $e/2$.

6.6 $z^{-1} - z^{-3}/3! + z^{-5}/5! - \dots$. Residue = 1.

6.14 Residue at $-2/3$ is $1/8$. Residue at 2 is $-1/8$.

6.18 Residue at $3i$ is $1/2 - i/3$.

6.22 Residue at $i\pi$ is -1 .

6.24 Residue at 0 is 2.

7.1 $\pi/6$.

7.6 $2\pi/3\sqrt{3}$