Assignment 4: Complex analysis Part 1

- 1. Prove that $arg(z_1z_2) = arg(z_1) + arg(z_2)$.
- 2. What is i^7 ?
- 3. Prove that if $(\bar{z})^2 = z^2$ then z is either real or pure imaginary.
- 4. Q 22 p.36 Saff and Snider.
- 5. Q 7, p.43 Saff and Snider.
- 6. Q.10 p.43 Saff and Snider.
- 7. Q.17 p. 44 Saff and Snider.
- 8. Q 6, p.49 Saff and Snider.
- 9. Consider f(z) = 1/z. What does it map the curve |z 1| = 1 to?
- 10. Using the definition of the complex derivative, show that $\operatorname{Re} z$ is nowhere differentiable.
- 11. Q.9, p.83 Saff and Snider.
- 12. If f(z) is analytic in the whole complex plane, it is called an entire function. Now do Q.13, p.84 Saff and Snider.
- 13. Q.1, Q.2, Q.3, Q.6, Q.8, p.89 Saff and Snider.
- 14. Q.6 p.183 Saff and Snider.
- 15. Q. 14 b p.184 Saff and Snider.
- 16. Q1b p.190 Saff and Snider.
- 17. Q1, Q 3, Q 9, Q 10 p.211 to p.213. Saff and Snider.