

Math 121A. Midterm #1, 19 Feb 2003. J. Strain

Name:

Problems:

Do 3 of 5 problems. (Specify above)

1. Find the real and imaginary parts of all values of
 (a) $\sinh(1+i\pi)$ (b) $\sinh^{-1}(\pi i/2)$.

2. Find and plot all values of $(-64)^{1/4}$.

3. Find the circle of convergence for

$$\sum_{n=0}^{\infty} \frac{(z-2+i)^n}{3^n}$$

4. Evaluate the first three coefficients in

$$\frac{1}{1+x+x^2} = a_0 + a_1x + a_2x^2 + \dots$$

5. Show that $\sqrt{1+x} = 1 + \frac{x}{2} \pm 0.032$
 for $|x| \leq \frac{1}{2}$.