

Math 129-8H Written Homework #1

Due September 3, in class.

1. Find a complex number in each quadrant and on each axis (so a total of 8 numbers). Express the numbers in both the forms $x + iy$ and $re^{i\theta}$.
2. Compute the derivatives of the following functions:
 - (a) $\frac{e^x}{1+x}$
 - (b) $\frac{e^x}{1+x^2}$
 - (c) $x \ln x$
 - (d) $\sin(\cos(x^2))$