

Math 1A Quiz 1
September 7th, 2007

Name _____ SID _____

1. Graph the function $f(x) = \cos(3x + 1)$, and show carefully (for example, using a sequence of graphs) how to obtain this graph from the graph for $\cos(x)$.

2. Let

$$g(x) = \frac{x^{100}}{x^2 + 5x + 6}$$

and

$$h(x) = e^x.$$

Find the domain of $h \circ g$.

[Hint: first find the domain of g .]

3. Find a $\delta > 0$ such that for $|x| < \delta$, we have

$$|e^x - 1| < \frac{1}{2}.$$

You may use the fact that $\ln 3 - \ln 2 < \ln 2$.

[Bonus point: prove this fact.]