TA: R McDougal Name: _____

Math 415 25 October 2007

Quiz III

Answer each question as completely as you can; remember you must show *all work* for full credit. You may not consult books, notes, or each other for this quiz. Good luck!

Let $f(x) = e^{-x}$. $g(x)$ is some other function. Assume the Wronskian of f and g satisfies

$$W\{f, g\}(x) = \frac{e^{ix} + e^{-ix}}{2}, \tag{1}$$

where $i^2 = -1$.

1. Use Euler's Formula to simplify (1). Your final answer should not involve i or $\sqrt{-1}$. (3 points)
2. Given that $g(0) = 1$, find $g(\pi/2)$. (7 points)