

QUIZ V:MATH 284

April 5, 2012.

NAME: _____

1. [6pts] Find the Laplace transform $F(s) = \mathcal{L}\{f(t)\}$ where

a) $f(t) = e^{-t} \cos(3t)$

b) $f(t) = t \sin(3t)$

2. [6pts] Find the inverse Laplace transform $f(t) = \mathcal{L}^{-1}\{F(s)\}$ where

$$F(s) = \frac{s}{s^2 - 6s + 13}$$

3. [8pts] Let $Y(s) = \mathcal{L}\{y(t)\}$ be the Laplace Transform of the solution of:

$$y'' - 2y' + y = e^{2t} \quad , \quad y(0) = 0 \quad , \quad y'(0) = 0$$

a) Determine a formula for $Y(s)$ and then write it out as a partial fraction expansion

b) Use your result in a) to find $y(t)$.