Name: _____ **Sort #:** _____

Worksheet 14: Inverse Laplace Transform & IVPs

MATH 2310, Spring 2019 Grade: / 0

1. Find the inverse Laplace transforms of the following functions

   (a) $F(s) = \dfrac{2s-3}{s^2-4}$

(b) $F(s) = \dfrac{1}{s+1} + \dfrac{8-s}{s^2-2s+2}$

You will need at least a full page to do the work for each of these problems so do your work for the next two questions on separate paper and staple to your worksheet. There is a lot of tedious algebra and arithmetic that needs to be done for these problems and it can be very easy to make little errors along the way. So as always, it is highly recommended that you DON'T SKIP STEPS!

2. Use the Laplace transform to solve

$$y'' - y' - 6y = 0, \qquad y(0) = 1, \quad y'(0) = -1$$

3. Use the Laplace transform to solve

$$y'' - 2y' + 2y = e^{-t}, \qquad y(0) = 0, \quad y'(0) = 1$$