

Quiz 7, Math 246, Professor David Levermore
Thursday, 29 March 2018

Your Name:

Discussion Instructor (circle one):	Kilian Cooley	Corry Bedwell	Thien Ngo
Discussion Time (circle one):	8:00	9:00	10:00
			11:00

No books, notes, calculators, or any electronic devices.

Show your reasoning for full credit. Good luck!

- (1) [5] Use the definition of the Laplace transform to compute $\mathcal{L}[f](s)$ for the function $f(t) = u(t - 5)e^{-2t}$, where u is the unit step function.

- (2) [1] Give the exponential order as $t \rightarrow \infty$ of the function $u(t - 5)t^2e^{-4t} \sin(3t)$.

- (3) [4] Find the Laplace transform $X(s)$ of the solution $x(t)$ of the initial-value problem

$$x'' + 16x = 0, \quad x(0) = 2, \quad x'(0) = -4.$$

DO NOT solve for $x(t)$, just $X(s)$!