

Quiz 2, Math 246, Professor David Levermore
Tuesday, 6 February 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] Find the explicit solution of the initial-value problem

$$\frac{dw}{dz} = 3z^2 e^{-w}, \quad w(-1) = w_I.$$

Give its interval of definition in terms of w_I .

- (2) [5] Sketch the phase-line portrait for the equation

$$\frac{dv}{dt} = \frac{(v+3)(v-1)(v-3)^2}{(v+1)^2}.$$

Classify each stationary point as being either stable, unstable, or semistable.
(You do not have to find the solution!)