

Mech 2 Math Suggested Problems Week #3

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1. Do the following questions from the text:

Section 2.2: 7, 8, 9, 13, 15, 42

Section 2.6: 3, 9, 30

2. Do the following questions based on Section 2.9 material:

- (a) An object of mass m is dropped from a high platform at time $t = 0$. Assume the drag force is proportional to the square of velocity with drag coefficient κ . Derive an expression for the velocity $v(t)$.
- (b) Assume that the action of a parachute can be modelled as a drag force proportional to the square of the velocity. What drag coefficient is needed for a 200 pound person to achieve a terminal velocity of 10 mph?