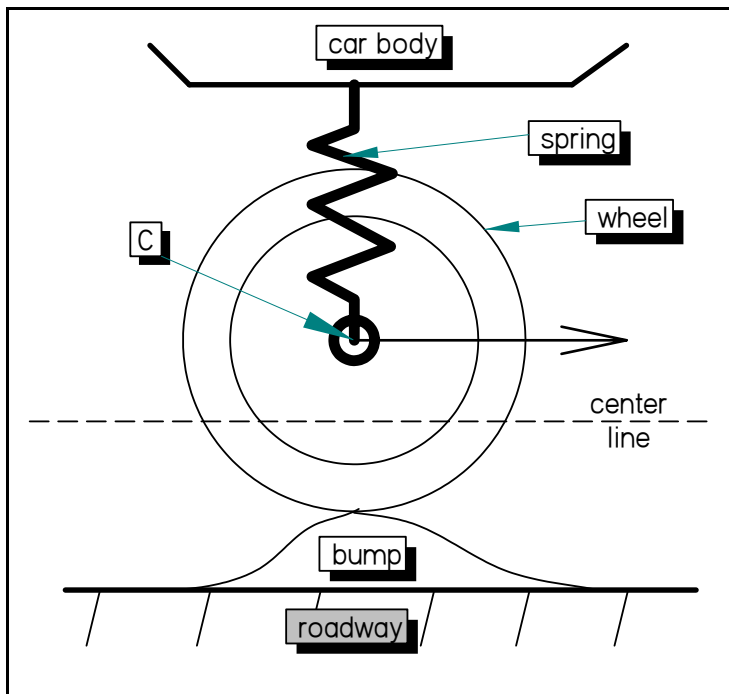


Problem: A car hits a bump in the road and displaces vertically as show to the right. The equation of motion of the wheel is governed by $h(t)$ shown below. Assume $t = 0$ when the wheel is at it's maximum displacement.

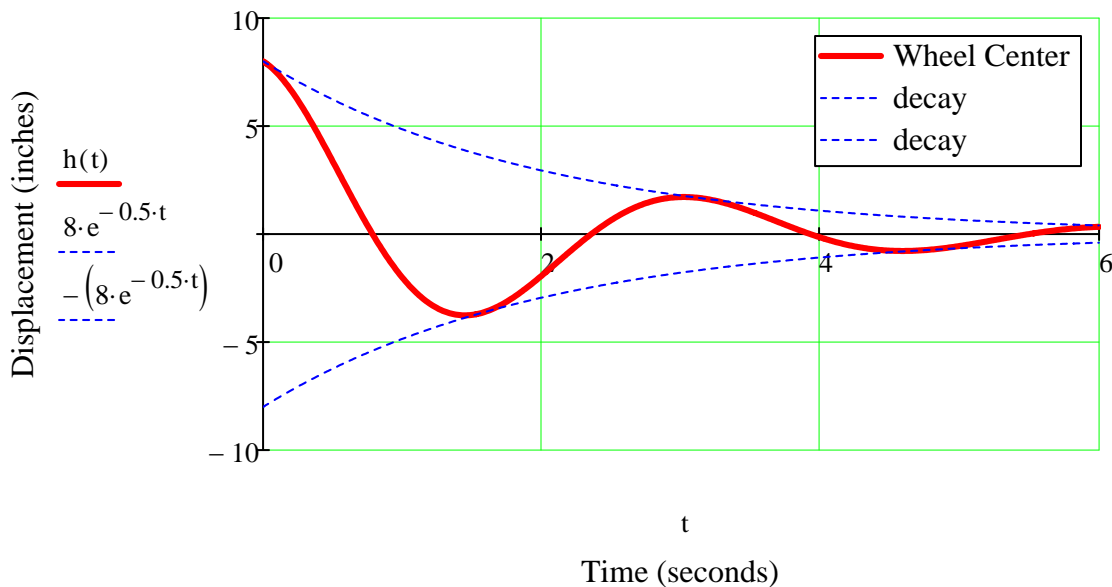
$$h(t) := (8 \cdot e^{-0.5 \cdot t}) \cdot \cos(2 \cdot t)$$

A graph of this displacement vs time from 0 to 6 seconds is shown below.

$$t := 0, .01 .. 6$$



Wheel Displacement vs Time



- 1) What is the wheel's displacement at $t = 1.6$ seconds?
- 2) Calculate the time(s) the wheel will have a displacement of 2.1 inches.
- 3) Calculate how many seconds until the wheel's displacement will be less than 0.25 inches.