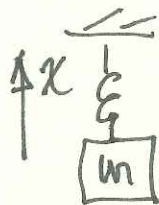


Test 2 topicsModels:

• Spring-mass: $mx'' + \overset{\text{damping}}{b}x' + \underset{\text{Spring}}{k}x = f(t)$ wobble top



• Pendulum: $L\theta'' + g\theta = 0$

Methods: $b_2y'' + b_1y' + b_0y = f(t)$

• CC, L, H - solve via Charac Eqn: $y_h = e^{rt}$

• CC, L, NH - " " UDC:

y_p "looks like" RHS

(table p. 293)

Ideas:

• Linear 2nd order DE, LI Homo Sol'n, Gen'l Sol'n, Superposition

• Homo DE: growth, decay, oscillation in sol'n

• Forced DE: resonance