

# Exercise 6.1

Consider a mass  $m$ , to which a spring with spring constant  $k$  and a damper with damping constant  $c$  are attached as shown in the diagram. Assume that the mass can move only in the  $x$  direction. The equation of motion is given by

$$m \frac{d^2 x}{dt^2} + c \frac{dx}{dt} + kx = 0$$

When setting  $c$  to ((your birth month) modulo 3)+1 and  $k$  to ((your birth day) modulo 7)+1, plot  $x(t)$  with  $m=1$ ,  $x(0)=1$  and  $dx/dt(0)=0$ .

E.g., If your birth month and date is 13<sup>th</sup> August, then  $c=3$  and  $k=7$

