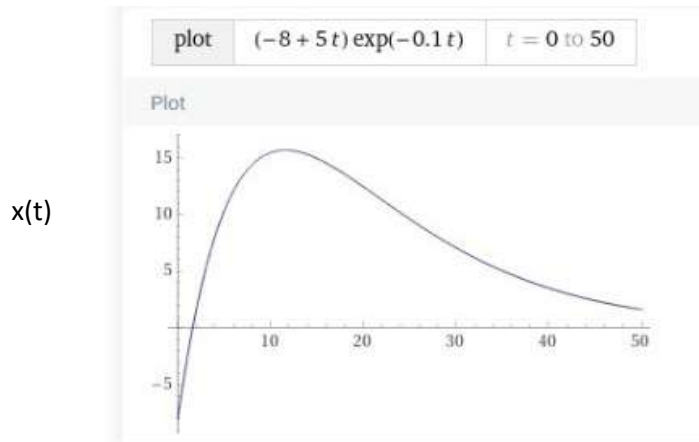


Additional notes

$x(t)$ v/s t for Critically damped oscillator

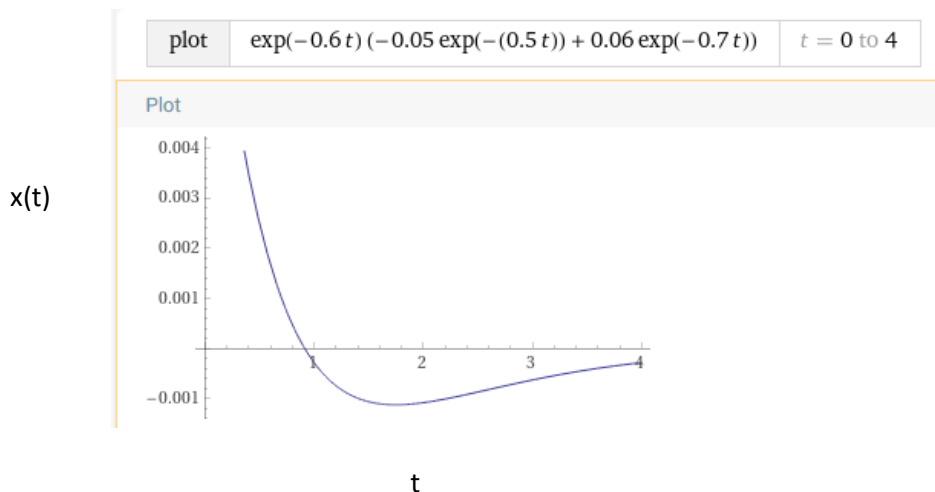


Plotted for initial conditions $A=-8$, $B=5$

t

At $t=0$, oscillator starts from $x(t=0) = -8$ and crosses the equilibrium point at $x(t=t_c)=0$ at $t=8/5$ s (1.6s), later this reverses its direction at a maximum point and tends to equilibrium at infinite time (apparently it never reaches). In this case equilibrium point is reached at most once.

$x(t)$ v/s t for over damped oscillator



Plotted for $A=-0.05$, $B=0.06$ $\gamma=-0.6$, $\Omega = 0.1$

At $t=0$, oscillator starts from $x(t=0) = 0.01$ (need to extrapolate to see it) and crosses the equilibrium point at $x(t=t_c)=0$ at $t=0.9$ s, later this reverses its direction at a maximum point and tends to equilibrium at infinite time (apparently it never reaches). In this case also equilibrium point is reached at most once.