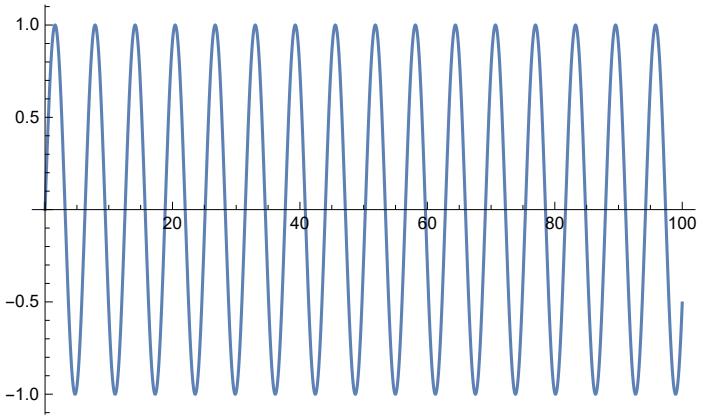
DIY Lecture 21 - S Tarun Prasad - ME17B114

(1)

In[3]:=
```
Plot[
 Evaluate[θ[t] /. NDSolve[{θ''[t] + θ[t] == 0, θ'[0] == 1, θ[0] == 0}, θ, {t, 0, 100}]],
 {t, 0, 100}]
```

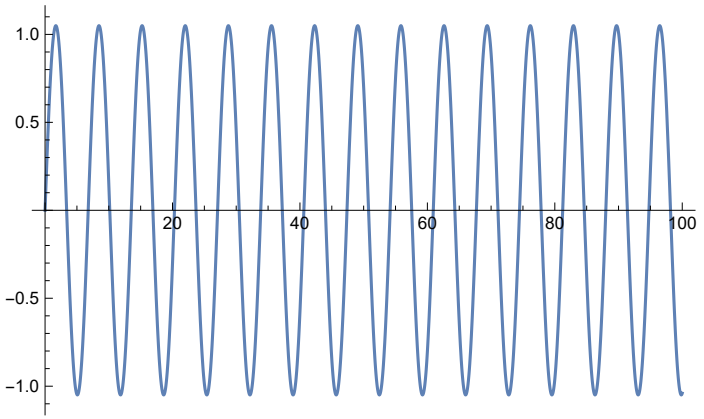
Out[3]=



(2)

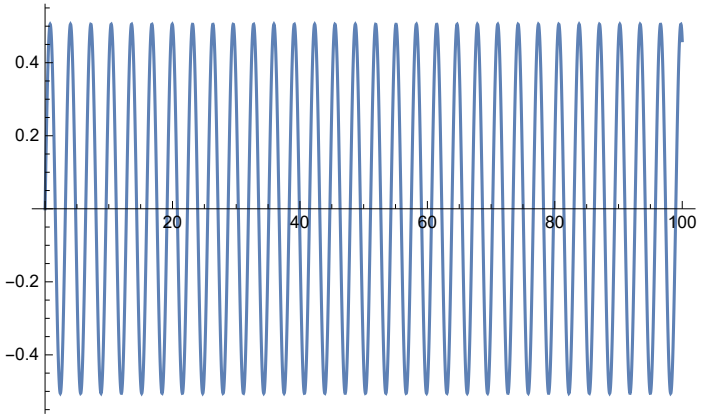
In[7]:=
```
Plot[
 Evaluate[θ[t] /. NDSolve[{θ''[t] + (θ[t] - (θ[t]^3/6)) == 0, θ'[0] == 1, θ[0] == 0},
    θ, {t, 0, 100}]], {t, 0, 100}]
```

Out[7]=



In[8]:=
```
Plot[Evaluate[
  θ[t] /. NDSolve[{θ''[t] + 4 * (θ[t] - (θ[t]^3 / 6)) == 0, θ'[0] == 1, θ[0] == 0},
    θ, {t, 0, 100}]], {t, 0, 100}]
```

Out[8]=



As seen in the above 2 graphs for ω0^2 = 1 and ω0^2 = 4, only the frequencies change. The nature of the graph as such is the same.