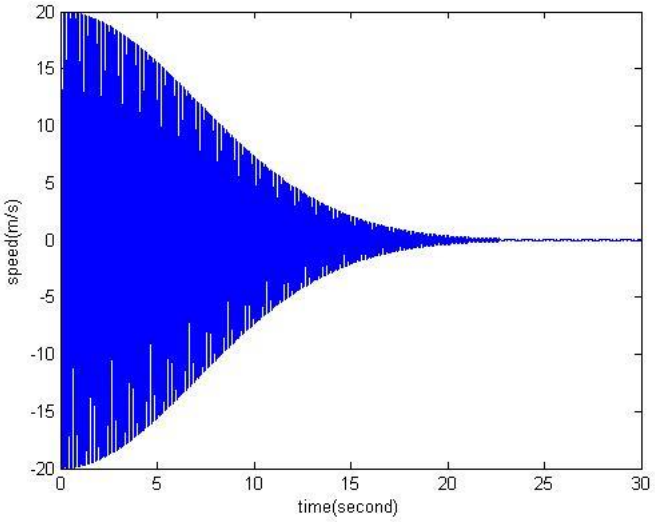
F74046022 陳冠仁

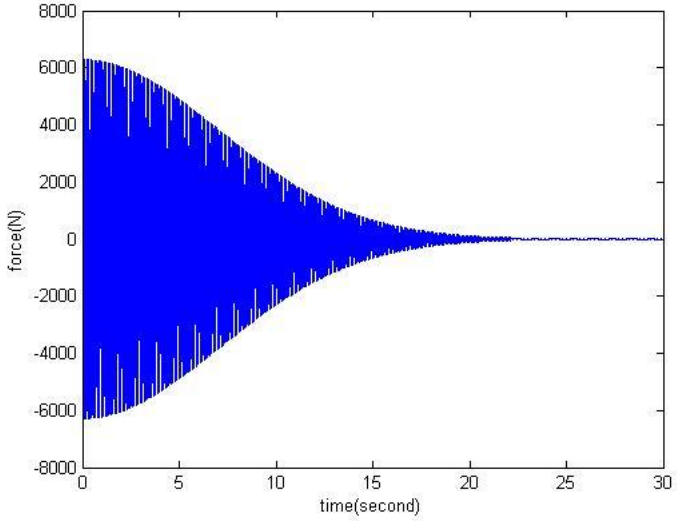
Prob1. Differentiation : Central Difference

Integration : Simpson's Method

(a)



(b)



(c) F(8) = -1015.773034 N

(d) x(10) = -0.06182356 m

(e) The total travel length from t = 0 to 10 is 95.110505957 m

Prob2. **Integration : Simpson's Method**

(i) 0.78539805

(ii) 2.15652299

(iii) 0.32179354

Prob3. **Integration : Monte Carlo**

A total of 10000000 random points are used and the volume of the ellipsoid is 25.1451024.

Prob4. **Integration : Simpson's Method**

(1) The total flux is 113097335529.226300 (Volt*m).

(2) The total flux is 113097335529.232150 (Volt*m).

(3) The total flux is 113097335529.232210 (Volt*m).

(4) The total flux is 0.000046 (Volt*m).