1 (a): 𝜆 = -1

(b): The angle between vector b and the position vector is, 82.17 deg

2 (a): Vector A = 389.87 e1 + 614.36 e2 + 181.8 e3, Vector B = -130.09 e1+ 815.68 e2 + 357.42 e3

(b): Vector R = 259.78 e1+ 1430.04 e2+ 539.22 e3

3. Velocity = 40.96 m/s, direction = 33.69 deg ; Acceleration = 38.64 m/s^2, direction = 11.94 deg.

4. (a): T= 4.6 s

(b): X= 171.4 m, y= 20 m