Home Exercise 4 - Answers

1) $\omega = 22.3$ rad/s
2) a) N = 2.23 rev
   b) v = 1250 mm/s, $\Delta = 1750$ mm
   c) a = 1220.9 mm/s^2 , $\varphi = 79.4^0$
3) ω = 35.4 rad/s, α = 10 rad/s^2 ,N = 35.3 rev
4) ω = 31.7 rad/s
5) a) $\omega = 84$ rad/s , b) θ = 138 rad, ω = 103 rad/s
6) ω = 8.49 rad/s, v = 0.6 m/s
7) v_A = 21.27 m/s , v_B = 10.635 m/s, a_A = 75.46 m/s^2, a_B =37.73 m/s^2
8) v = 2.4 m/s
9) v = 5.18 m/s
10) v = 0.897 m/s
11) a) v = 8.69 m/s, , $\varphi = 22.9^0$
    b) v = 5.72 m/s, , $\varphi = 36.2^0$
12) α_{BC} = 0.375 rad/s^2, a_c = 62.6 cm/s^2, θ=12.5^0
13) ω = 2 rad/s, α = 7.68 rad/s^2
14) a) a = 5.94 m/s^2, $\varphi = 53.9^0$
    b) a = 6.21 m/s^s, $\varphi = 45.8^0$
15) α = 36 rad/s^2
16) a_C = 3.82 m/s^2 , α_{BC} = 9.6 rad/s^2
17) a_A = 6.71 m/s^2, $\varphi = 63.4^0$, a_B = 6.71 m/s^2, $\varphi = 63.4^0$
18) a_E = 0.0714 m/s^2
19) ω_{AC} = 0, ω_F = 10.7 rad/s, α_{AC} = 28.7 rad/s^2
20) α = 60 rad/s^2, a_B = 6.71 m/s^2, $\varphi = 84.9^0$
21) ω = 22.2 rad/s , v_C=7.18 m/s , $\varphi = 68.2^0$
22) a_C = 10.3 m/s^2