

Elementary Engineering Mathematics

Exercises #3 Answers

1. $x = 1350$ (ft), $y \approx 2338$ (ft)
2. $x \approx -1299$ (ft), $y = -750$ (ft)
3. $r \approx 3133$ (ft), $\theta \approx -28.6$ (deg) ≈ -0.499 (rad)
4. $r \approx 1953$ (ft), $\theta \approx 230$ (deg) ≈ 4.02 (rad)
5. $\theta \approx 36.9$ (deg) ≈ 0.644 (rad)
6. $x \approx 2.77$ (ft), $y \approx 3.04$ (ft)
7. $x \approx 3.04$ (ft), $y \approx 0.266$ (ft)
8. $\alpha \approx 15.0$ (deg) ≈ 0.262 (rad), $\beta \approx 143$ (deg) ≈ 2.50 (rad)
 $\theta_1 \approx 21.4$ (deg) ≈ 0.374 (rad), $\theta_2 \approx 58.2$ (deg) ≈ 1.02 (rad) (Elbow down)
9. a) $r_B \approx 20$ (in), $r_C \approx 23$ (in)
b) $v_C \approx 9.2$ (in/s)
10. a) $\alpha \approx 80$ (deg), $\beta = 45$ (deg), $\gamma \approx 55$ (deg)
b) $r_B \approx 14.1$ (in), $r_C \approx 17$ (in)
c) $v_C \approx 12$ (in/s)