

ENGR 1990 Engineering Mathematics Homework #3 Answers

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