

Assignment 6

Coverage: 15.8 in Text.

Exercises: 15.8. No 1,3, 7, 9, 12, 14, 15, 16.

Submit no. 7, 9, 12, 16 by March 1.

Supplementary Problems

1. The rotation by an angle θ in anticlockwise direction is given by $(x, y) = (\cos \theta u - \sin \theta v, \sin \theta u + \cos \theta v)$. Verify that rotation leaves the area unchanged.
2. Let D be the region bounded by four lines $y = ax + b_1, y = ax + b_2, y = cx + d_1, y = cx + d_2$ where you may assume $c > a > 0, b_1 < b_2$ and $d_1 < d_2$. Show the area of D is given by $(b_2 - b_1)(d_2 - d_1)/(c - a)$.