

7.1 Notes

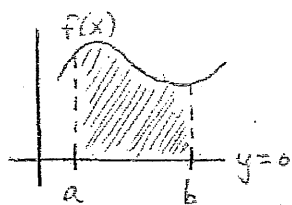
Area between 2 curves (graphs)

right bound $\rightarrow x_2$

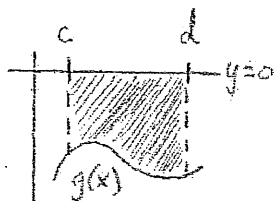
$$\text{Area} = \int_{\text{left bound} \rightarrow x_1}^{\text{right bound} \rightarrow x_2} (\text{Top function} - \text{Bottom function}) dx$$

All variables/values in terms of x

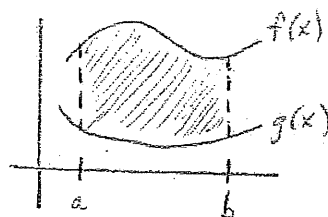
left bound $\rightarrow x_1$



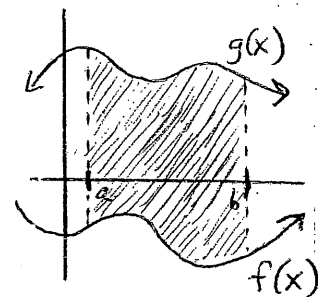
Area =



Area =

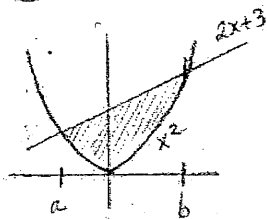


Area =



Area =

Ex.1 Find the area of the region bounded by $y=x^2$ and $y=2x+3$



Steps:

- 1) Find points of intersection (to locate left and right bounds for region)
- 2) Identify top and bottom function
- 3) Plug into Area formula and solve.

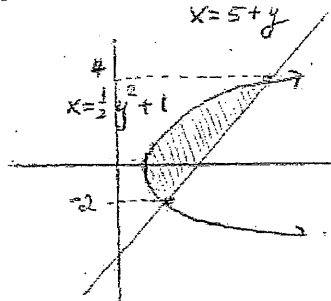
7.1 Notes (continued)

$$\text{Area}_{\text{(sideways)}} = \int_{y_1}^{y_2} [\text{Right graph} - \text{Left graph}] dy$$

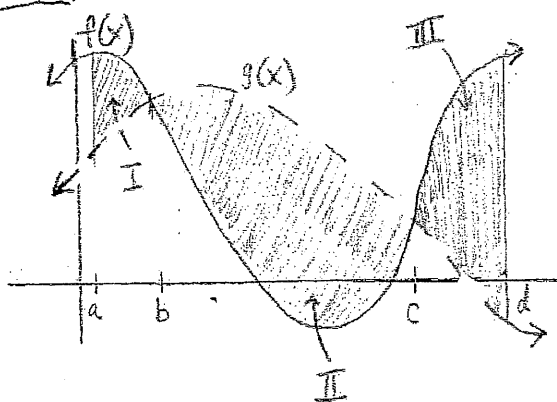
} All variables/values in terms of y

y_2 ← upper bound (y-value)
 y_1 ← lower bound (y-value)

Ex. 2 Find area of region bounded by $y = \pm\sqrt{2x-2}$ and $y = x-5$



Ex. 3



* To find Area, write separate integrals due to alternating top and bottom functions.

Area =