

Mohammed Kaabar

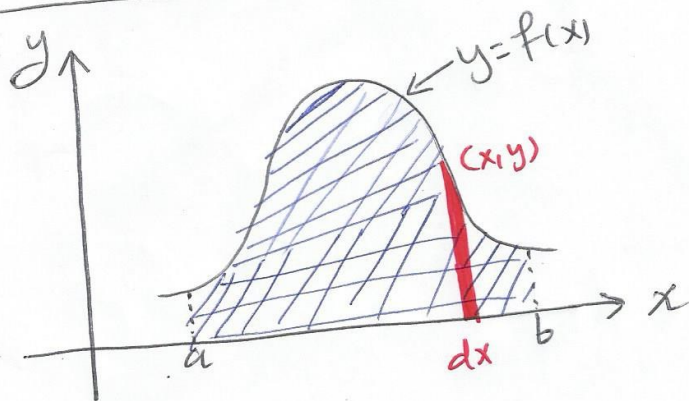
Math 172 Lab
Fall 2015
Sections: 788

Tuesday
September 1st, 2015

Area between Curves

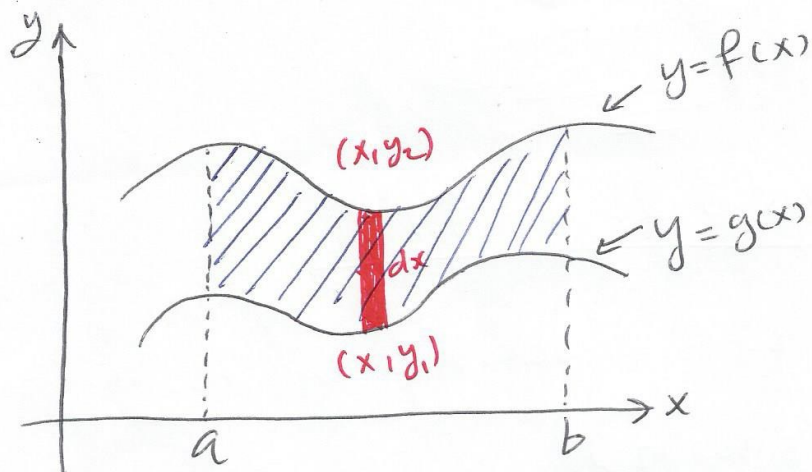
First of all, we will discuss four different cases of area between curves as follows:

I. First Case:

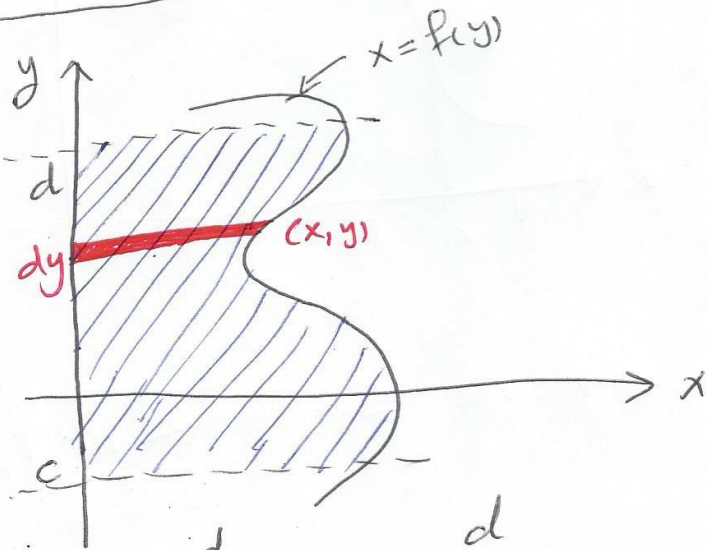


$$\text{Area} = \int_a^b y \, dx = \int_a^b f(x) \, dx$$



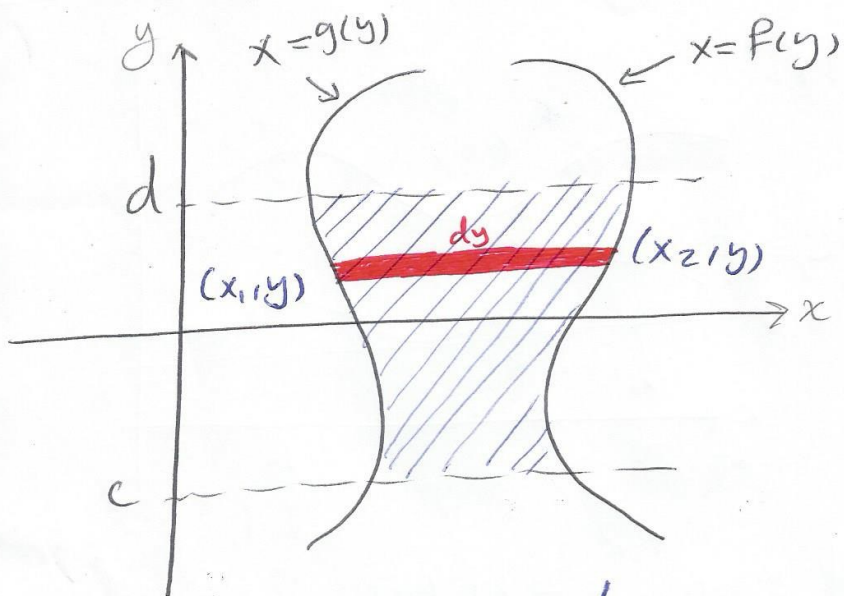
II. Second Case:

$$\text{Area} = \int_a^b (y_2 - y_1) dx = \int_a^b (f(x) - g(x)) dx$$

III. Third Case:

$$\text{Area} = \int_c^d x dy = \int_c^d f(y) dy$$

\Rightarrow



$$\text{Area} = \int_c^d (x_2 - x_1) dy = \int_c^d (f(y) - g(y)) dy$$

In conclusion, you can apply the above four different cases to find the area between curves for any mathematical problem.