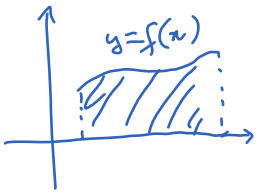
Lecture 2

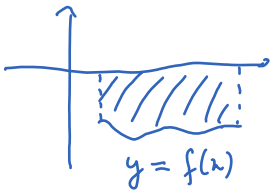
Thursday, August 31, 2023 12:20 AM

* Prayer

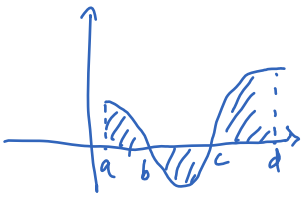
* Area as integral :



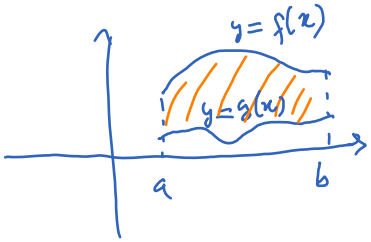
$$\text{area} = \int_a^b f(x)\,dx$$



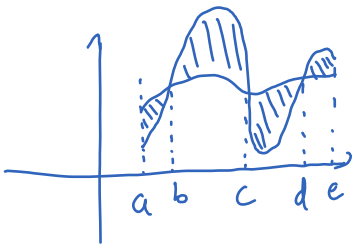
$$\text{area} = -\int_a^b f(x)\,dx$$



$$\text{area} = \int_a^b - \int_b^c + \int_c^d f(x)\,dx = \int_a^d |f(x)|\,dx$$

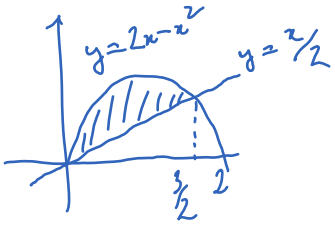


$$\text{area} = \int_a^b (f(x) - g(x))\,dx$$



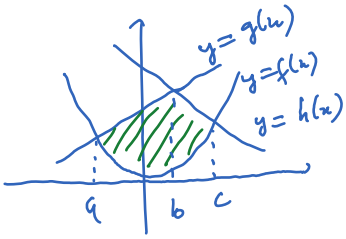
$$\text{area} = \int_a^e |f(x) - g(x)|\,dx$$

Ex



$$\text{area} = \int_0^{3/2} \left(2x - x^2 - \frac{x}{2}\right) dx$$

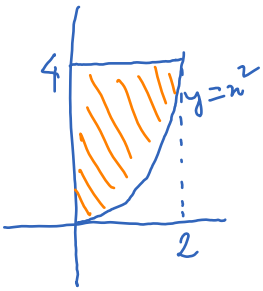
Ex



$$\text{area} = \int_a^b \left(g(x) - f(x)\right) dx + \int_b^c \left(f(x) - h(x)\right) dx$$

Work on the first problem on the worksheet.

Sometimes we can integrate in y (instead of x)



$$\text{area} = \int_0^4 \sqrt{y}\, dy = \int_0^2 (4 - x^2)\, dx$$