

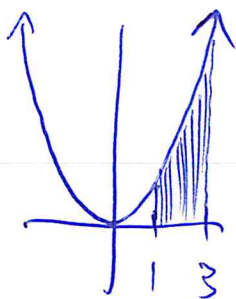
4-4 Day 1 Obj

to evaluate Definite Integrals
using Fundamental Thm of
Calculus (FTC)

$$\text{FTC } \int_a^b f(x) dx = F(b) - F(a)$$

↑
antiderivative

Ex: $\int_1^3 x^2 dx$



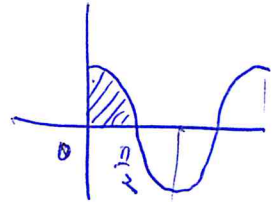
$$\begin{aligned} &= \left. \frac{1}{3} x^3 + C \right|_1^3 \\ &= \left[\frac{1}{3} (3)^3 + C \right] - \left[\frac{1}{3} (1)^3 + C \right] \end{aligned}$$

$F(b)$ $F(a)$

$$= \frac{1}{3} \cdot 27 + \cancel{C} - \frac{1}{3} - \cancel{C}$$

$$= \boxed{\frac{26}{3}}$$

$$\text{Ex } \int_0^{\frac{\pi}{2}} \cos x \, dx$$



$$= \sin x \Big|_0^{\frac{\pi}{2}}$$

$$= \sin\left(\frac{\pi}{2}\right) - \sin(0)$$

$$= 1 - 0$$

$$= \boxed{1}$$