

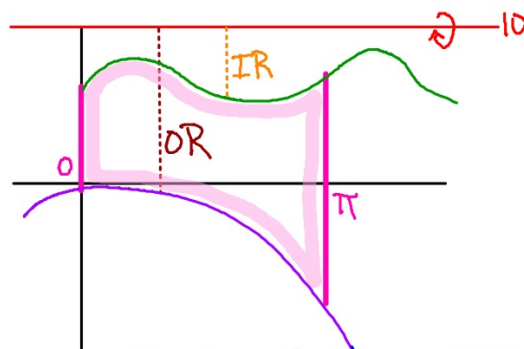


November 28

SWBAT:

Find the volume using the
disk method in terms of y

Find the volume of the solid generated by revolving the region bounded by $y = \sin(x) + 3$, $y = -x^2$ on $[0, \pi]$ about $y = 10$

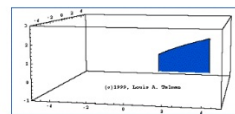
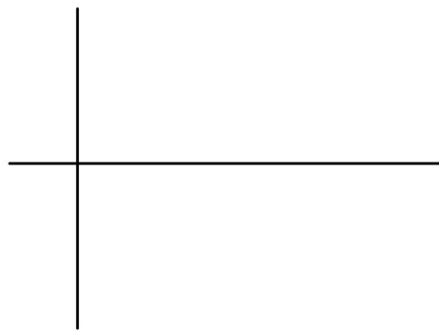


$$\begin{aligned} OR &= 10 - (-x^2) \\ &= 10 + x^2 \end{aligned}$$

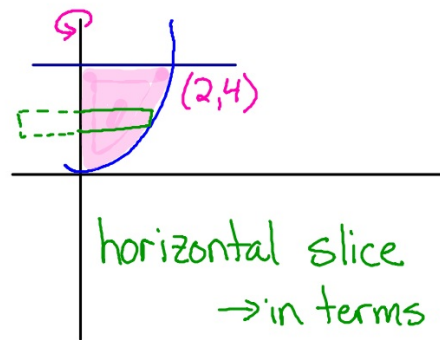
$$\begin{aligned} IR &= 10 - (\sin x + 3) \\ &= 7 - \sin x \end{aligned}$$

$$\begin{aligned} V &= \pi \int_0^{\pi} (10 + x^2)^2 - (7 - \sin x)^2 dx \\ &= 1428.051 \end{aligned}$$

Find the volume
of the solid generated
by revolving the
region bounded by
 $y = \sqrt{x}$, $x = 4$ and the
x-axis
about the y-axis



Find the volume of the solid generated by revolving the region bounded by $y = x^2$, $y = 4$, and the y-axis about the y-axis

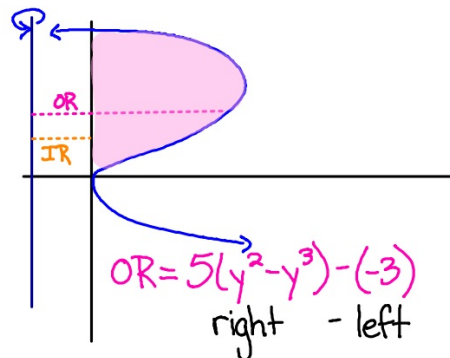


$$y = x^2 \rightarrow x = \sqrt{y}$$
$$r = \sqrt{y}$$

$$V = \pi \int_0^4 (\sqrt{y})^2 dy = 25.132 = 8\pi$$

↑
y-values

Find the volume of the solid generated by revolving the region bounded by $x = 5(y^2 - y^3)$ and the y-axis about the line $x = -3$



$$IR = 0 - (-3)$$

$$V = \pi \int_0^1 (5(y^2 - y^3) + 3)^2 - (0 + 3)^2 dy$$

$$= 8.601$$

Bounds

$$0 = 5(y^2 - y^3)$$

$$0 = y^2 - y^3$$

$$0 = y^2(1 - y)$$

$$0 = y^2$$

$$0 = 1 - y$$

$$0 = y$$

$$1 = y$$