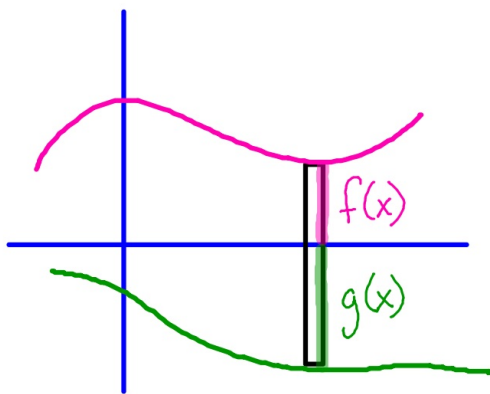


November 5

SWBAT:

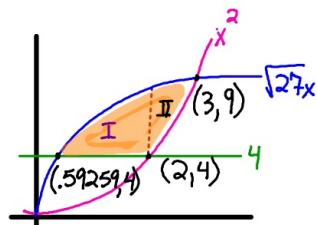
Find the area between
two curves
with respect to y

$$\text{Area} = \int_a^b \underset{y}{\text{upper}} - \underset{y}{\text{lower}} \, dx$$



$$h = f(x) - g(x)$$

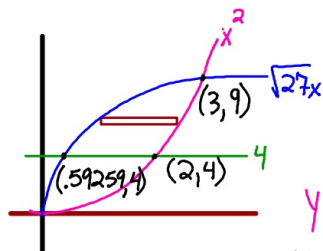
find the area
enclosed by
 $y = x^2$
 $y = \sqrt{27}x$
and below by
 $y = 4$
↑ bottom
boundary



$$A_I = \int_{0.59259}^2 (\sqrt{27}x - 4) dx = 2.588$$

$$A_{II} = \int_2^3 (\sqrt{27}x - x^2) dx = 1.8687$$

$$\text{Total} = 4.4567$$



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

$$y = \sqrt{27}x \rightarrow y^2 = 27x$$

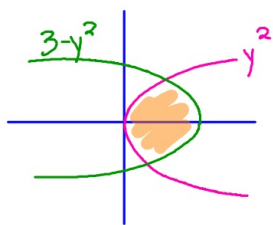
$$\frac{y^2}{27} = x$$

$$V = \int_c^d \text{right} - \text{left} dy$$

$$= \int_4^9 \sqrt{y} - \frac{y^2}{27} dy = 4.4567$$

↑
y-values

find the
area bounded
by $x = y^2$
and $x = 3 - y^2$



$$\int_{-\sqrt{\frac{3}{2}}}^{\sqrt{\frac{3}{2}}} (3 - y^2 - y^2) dy$$

$$= 4.898$$

Intersection pts

$$\begin{aligned} 3 - y^2 &= y^2 \\ +y^2 &+y^2 \\ \hline \frac{3}{2} &= \frac{2}{2}y^2 \\ \frac{3}{2} &= y^2 \\ \sqrt{\frac{3}{2}} &= \sqrt{y^2} \\ \pm\sqrt{\frac{3}{2}} &= y \end{aligned}$$

Area
with
respect
to y

horizontal slices

$x = \underline{\hspace{1cm}}$

$x = \underline{\hspace{1cm}}$

$$\int_c^d \text{right } x - \text{left } x \, dy$$

↑
y-values