

JANUARY 9

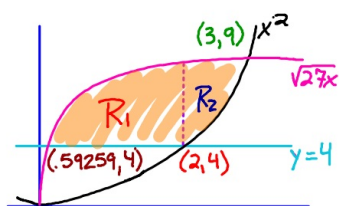
How do you know what region you are looking for when no bounds are given?

JANUARY 9

Students will verbally explain how to find the area bounded by two functions

(using the words:  
above, below, right, left...)

Find the area enclosed  
by the graphs of  
 $y = x^2$   
 $y = \sqrt{27x}$   
And below by  $y = 4$

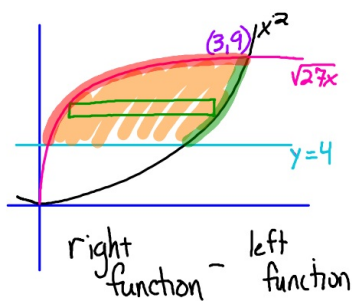


$$R_1 = \int_{0.59259}^2 \sqrt{27x} - 4 \, dx = 2.588$$

$$R_2 = \int_2^3 \sqrt{27x} - x^2 \, dx = 1.868$$

$$\underline{4.456}$$

Find the area enclosed  
by the graphs of  
 $y = x^2$   
 $y = \sqrt{27x}$   
And below by  $y = 4$



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

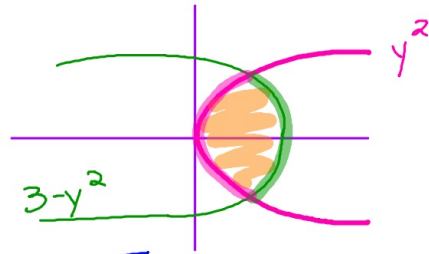
$$y = \sqrt{27x} \rightarrow y^2 = 27x \rightarrow x = \frac{y^2}{27}$$

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

Find the area  
bounded by

$$x = y^2$$

$$x = 3 - y^2$$



$$\int_{-\frac{\sqrt{3}}{2}}^{\frac{\sqrt{3}}{2}} (3 - y^2 - y^2) dy$$
$$= 4.8989$$

$$\begin{array}{r} y^2 = 3 - y^2 \\ + y^2 \quad + y^2 \\ \hline 2y^2 = 3 \\ \frac{2y^2}{2} = \frac{3}{2} \\ y^2 = \frac{3}{2} \\ y = \pm \sqrt{\frac{3}{2}} \end{array} \left. \vphantom{\begin{array}{r} y^2 = 3 - y^2 \\ + y^2 \quad + y^2 \\ \hline 2y^2 = 3 \\ \frac{2y^2}{2} = \frac{3}{2} \\ y^2 = \frac{3}{2} \\ y = \pm \sqrt{\frac{3}{2}} \end{array}} \right\} \text{find the bounds}$$