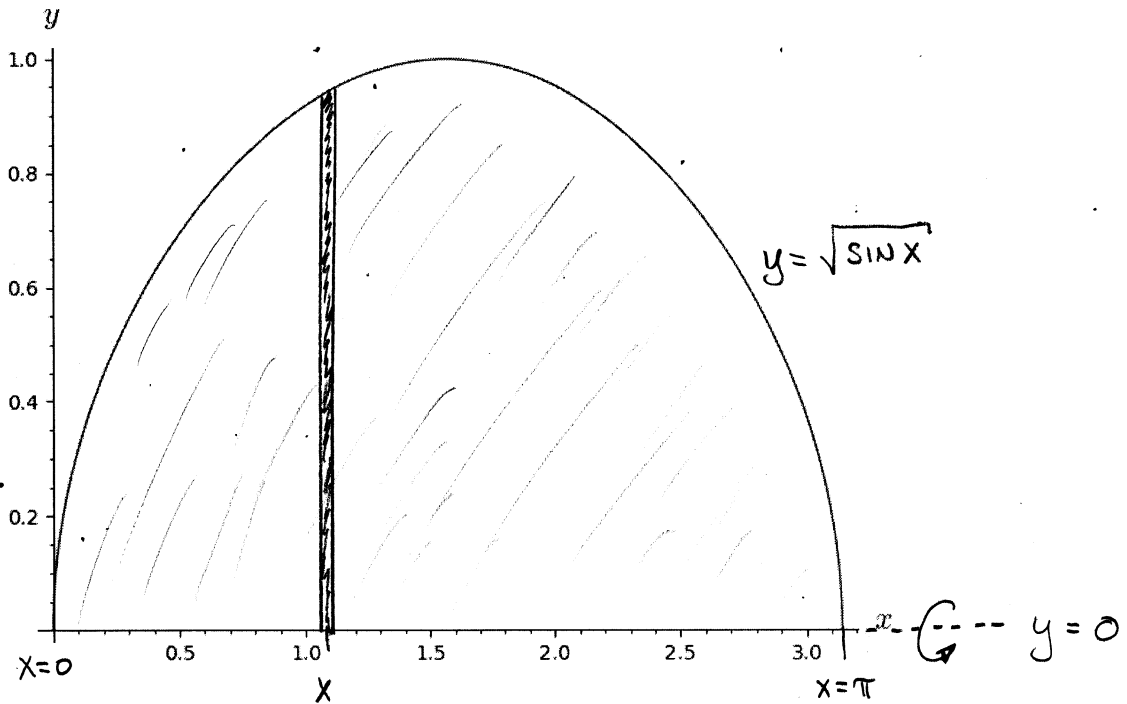


Example

The region bounded by the graphs of $y = \sqrt{\sin x}$ and $y = 0$ is rotated about the x -axis. Find the volume of the solid that is generated.

Solution



DISKS...

$$\sqrt{\sin x} = 0 \Rightarrow \sin x = 0 \Rightarrow x = 0, \pi$$

LENGTH OF STRIP = RADIUS OF DISK

$$= R(x) = \sqrt{\sin x} - 0$$

$$\text{VOLUME} = \pi \int_0^{\pi} (\sqrt{\sin x})^2 dx$$

$$= \pi \int_0^{\pi} \sin x dx = \pi (-\cos x) \Big|_0^{\pi}$$

$$= \pi (1 + 1) = \boxed{2\pi}$$