# Math 2300-007: Quiz 4a

Name: Solutions 2/7/18

Score: _____

1. (2 points) In a sentence or two, what would you say is the main strategy for calculating the volume of a solid of revolution?

Chop the solid into slices, add up the volumes of the slices. When the slices become infinitely thin, this becomes an integral.

2. (3 points) Suppose you are asked to calculate the volume of the solid formed by rotating around the x-axis the region bounded by the curves $y = \sqrt{x}$, $y = 0$, $x = 2$, and $x = 6$. Cross-sections are disks like the one shown to the right. Fill the blanks with expressions involving x.
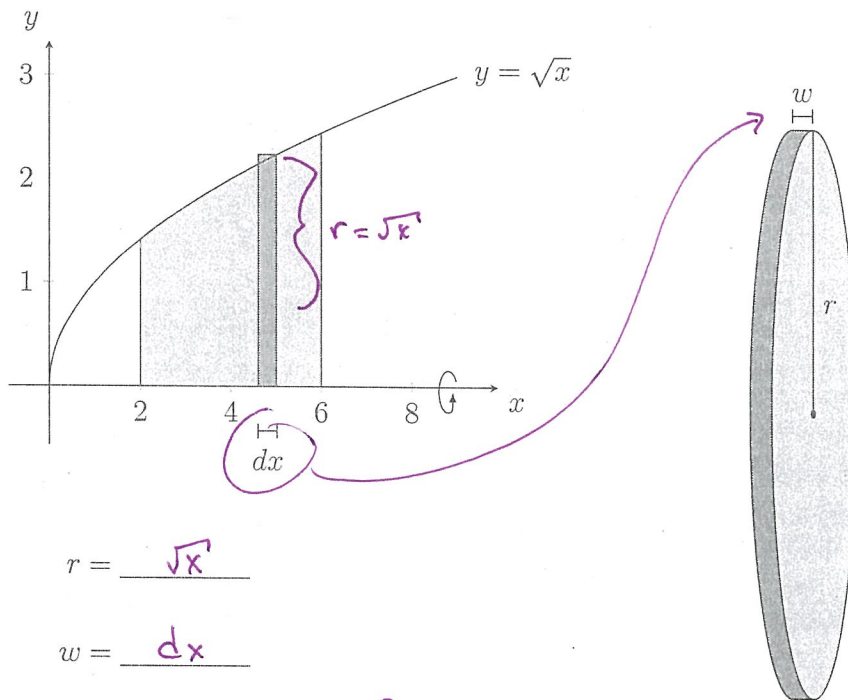
$r = \underline{\sqrt{x}}$

$w = \underline{dx}$

Volume of Slice $= \underline{\pi r^2 w = \pi (\sqrt{x})^2 dx = \pi x \, dx}$

Total Volume $= \int_{2}^{6} \boxed{\pi x \, dx}$

1