Math 2300-007: Quiz 4b

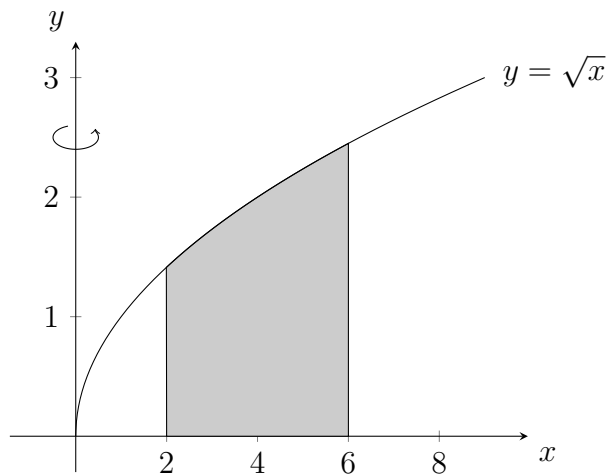Name: _____   Score: _____

1. (1 point) In a sentence or two, what would you say is the main **difference** between the shell method and the washer/disk method for finding the volume of a solid of revolution?
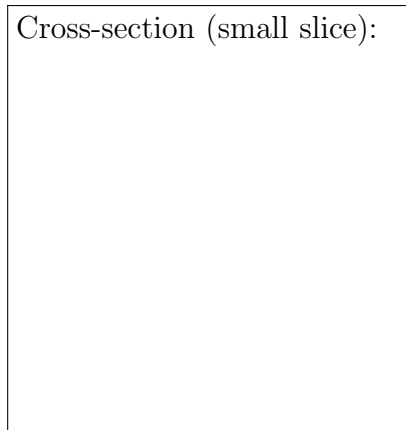
2. (4 points) Suppose you are asked to use the **shell method** to calculate the volume of the solid formed by rotating around the y-axis the region bounded by the curves $y = \sqrt{x}$, $y = 0$, $x = 2$, and $x = 6$.

   (a) Would your integral be with respect to dx or dy?

   (b) On the graph below, draw a small rectangle that is consistent with your answer from part (a).

   (c) Next to the graph, sketch the cross-section (small slice) that you get from rotating your rectangle around the y-axis.

Cross-section (small slice):

   (d) What is the volume of the cross-section (small slice) that you drew?

   $V_{\text{slice}} = $ _____