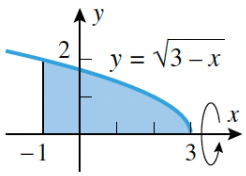
BC CALCULUS PRACTICE 7.2B **Name:** _____ **Period** _____

Aisle _____ pg. 456 – 1-37 every other odd, 53

Show all necessary work neatly.

In Exercises 1–4, find the volume of the solid that results when the shaded region is revolved about the indicated axis.

1.



5. Find the volume of the solid whose base is the region bounded between the curve $y = x^2$ and the x-axis from $x = 0$ to $x = 2$ and whose cross sections taken perpendicular to the x-axis are squares.

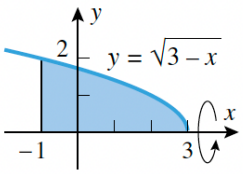
7-16: Find the volume of the solid that results when the region enclosed by the given curves is revolved about the x-axis.

9. $y = \sqrt{25 - x^2},\ y = 3$

13. $y = e^x, y = 0, x = 0, x = \ln 3$, revolved about the x-axis.

17. Find the volume of the solid whose base is the region bounded between the curve $y = x^3$ and the y-axis from $y = 0$ to $y = 1$ and whose cross sections taken perpendicular to the y-axis are squares.	19-26: Find the volume of the solid that results when the region enclosed by the given curves is revolved about the y-axis. 21. $x = \csc y,\ \ y = \pi/4,\ \ y = 3\pi/4,\ \ x = 0$
25. $y = \ln x\,, x = 0, y = 0, y = 1$; revolved about the y-axis.	29. Find the volume of the solid generated when the region enclosed by $y = \sqrt{x+1}$, $y = \sqrt{2x}$, and $y = 0$ is revolved about the x-axis. [*Hint:* Split the solid into two parts.]

33. Find the volume of the solid that results when the region is revolved about the line $\boldsymbol{y = 2}$. (arrow on the figure is incorrect.)



37.

Find the volume of the solid that results when the region enclosed by $x = y^2$ and $x = y$ is revolved about the line $y = -1$.

53.

As shown in the accompanying figure, a cocktail glass with a bowl shaped like a hemisphere of diameter 8 cm contains a cherry with a diameter of 2 cm. If the glass is filled to a depth of h cm, what is the volume of liquid it contains?

[*Hint:* First consider the case where the cherry is partially submerged, then the case where it is totally submerged.]