Name: _____ 6-2C Volumes with known cross-sections

Sketch the region, set up the integral, and find the volume of the solid generated.

1. Region bounded by: $y = 7 - 2x^2$, $y = x^2 + 4$
   Cross sectional areas perpendicular to the x-axis are squares. Find the volume.

2. Region bounded by: $x = (y-1)^2$, $x = 3$
   Cross sectional areas perpendicular to the y-axis are equilateral triangles. Find the volume.

3. Region bounded by: $y = \sin x$, $y = -\cos x$
   Cross sectional areas perpendicular to the x-axis are semi-circles. Find the volume.

4. Region bounded by: $y = \sqrt{x}$, $y = x - 2$, $y = 0$
   Cross sectional areas perpendicular to the x-axis are squares. Find the volume.

5. Region bounded by: $y = x^2 + 1$, $y = -2x + 4$, $x = 0$, $y = 0$
   Cross sectional areas perpendicular to the y-axis are isosceles right triangles. Find the volume.

6. Region bounded by: $y = 5 - x^2$, $y = x - 7$
   Cross sectional areas perpendicular to the x-axis are equilateral triangles. Find the volume.

7. Region bounded by: $x = 3 - y^2$, $x = y + 1$
   Cross sectional areas perpendicular to the x-axis are squares. Find the volume.