## Do the following for each problem:

1.) Set up the integral to find the area of the shaded region
2.) Set up the integral to find the volume of the solid created when revolving the area around the $x$-axis using both the washer and shell method.
3.) Set up the integral to find the volume of the solid created when revolving the area around the $y$-axis using both the washer and shell method.
4.) Find the perimeter of the region.
1.

2.

3.


For the following set up an integral to find the volume using any of the methods: (Use the line of the revolution given in the problem.)
4.

5.

6.


