Calculus AB Name_____

Worksheet 23 - Solids of Revolution with Displaced Axes

Period____

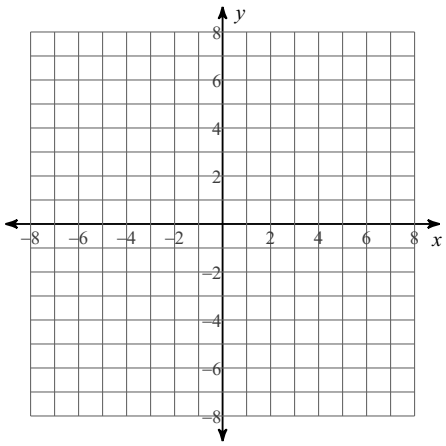
For each problem, find the volume of the solid that results when the region enclosed by the curves is revolved about the the given axis.

1) $y = x^2 + 2,\ y = 2,\ x = 2$
Axis: $y = 2$

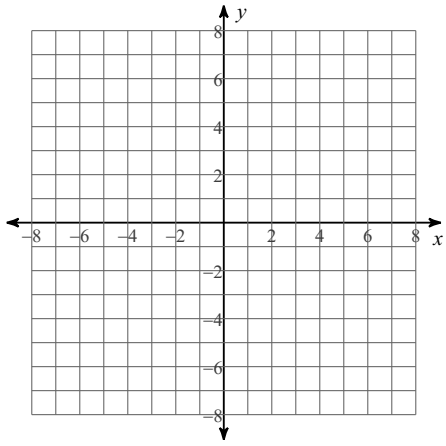
2) $y = -x^2 + 5,\ y = 1$
Axis: $y = 1$

For each problem, find the volume of the solid that results when the region enclosed by the curves is revolved about the the given axis. You may use the provided graph to sketch the curves and shade the enclosed region.

3) $x = -y^2 + 3,\ x = 2,\ y = 0,\ y = 1$
Axis: $x = 2$



4) $x = \sqrt{y} - 2,\ x = -2,\ y = 1$
Axis: $x = -2$



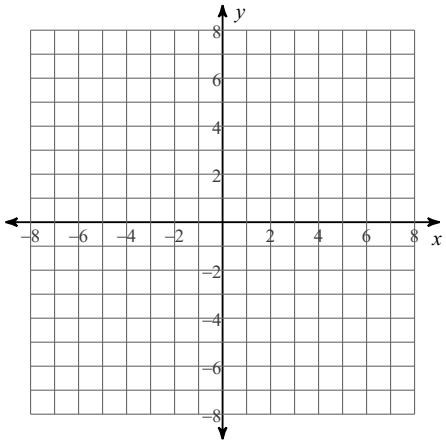
For each problem, find the volume of the solid that results when the region enclosed by the curves is revolved about the the given axis.

5) $y = x - 1,\ y = -x^2 + 1,\ x = -2,\ x = 0$
Axis: $y = 2$

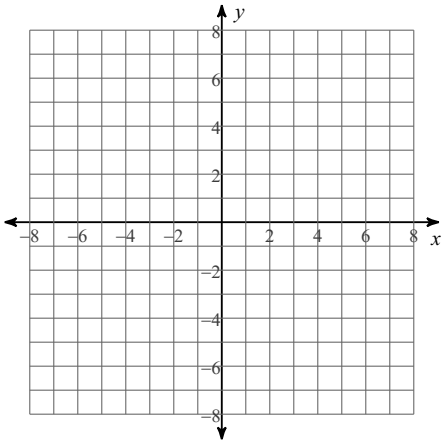
6) $y = -x^2 + 7,\ y = 3,\ x = 0,\ x = 2$
Axis: $y = 2$

For each problem, find the volume of the solid that results when the region enclosed by the curves is revolved about the the given axis. You may use the provided graph to sketch the curves and shade the enclosed region.

7) $x = -y^2 + 1,\ x = 0$
Axis: $x = -1$

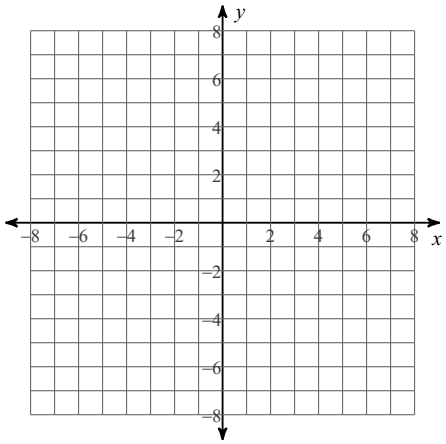


8) $x = -y^2 + 5,\ x = -y + 3,\ y = 0,\ y = 1$
Axis: $x = -1$



9) $x = 2,\ x = \sqrt{y},\ y = 0$

Axis: $y = 0$



10) $x = 2,\ x = \sqrt{y - 3},\ y = 3$

Axis: $y = 1$