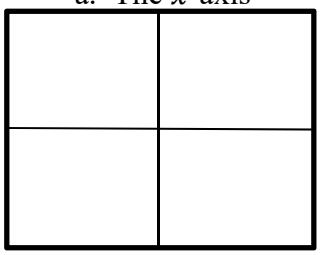
11.3 Solids of Revolution (Washers)

Calculus Name: _____ **CA #1**

1. Sketch the graph and find the area of the region bounded by $y = x^2$ and $y = 2x$.

Set up the integral to find the volume when revolving it about the given line. DO NOT EVALUATE!

a. The x-axis

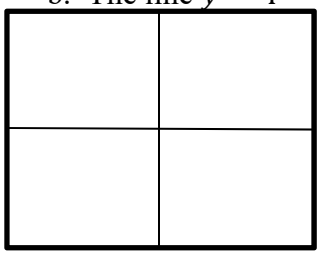


$R =$

$r =$

$V =$

b. The line $y = 4$

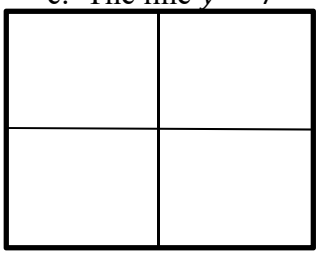


$R =$

$r =$

$V =$

c. The line $y = 7$

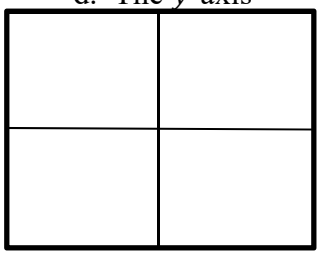


$R =$

$r =$

$V =$

d. The y-axis

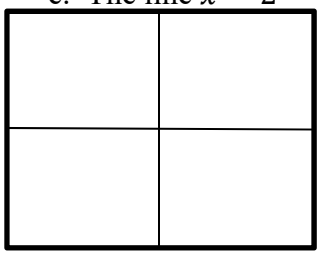


$R =$

$r =$

$V =$

e. The line $x = 2$

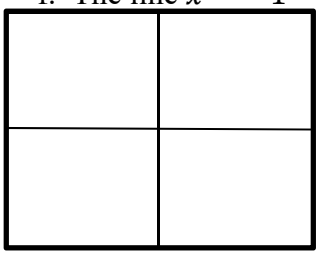


$R =$

$r =$

$V =$

f. The line $x = -1$



$R =$

$r =$

$V =$

Answers to 11.3 CA #1

1. $A = \int_0^2 (2x - x^2)\,dx = \frac{4}{3}$	1a. $V = \pi \int_0^2 (4x^2 - x^4)\,dx$	1b. $V = \pi \int_0^2 (4 - x^2)^2 - (4 - 2x)^2\,dx$
1c. $V = \pi \int_0^2 (7 - x^2)^2 - (7 - 2x)^2\,dx$	1d. $V = \pi \int_0^4 \left(y - \frac{1}{4}y^2\right) dy$	
1e. $V = \pi \int_0^4 \left(2 - \frac{1}{2}y\right)^2 - \left(2 - \sqrt{y}\right)^2 dy$	1f. $V = \pi \int_0^4 \left(\sqrt{y} + 1\right)^2 - \left(\frac{1}{2}y + 1\right)^2 dy$	