

## Math 102 — Shell method

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**Problem 1.** Use the shell method to set up an integral to find the volume of the solid of revolution formed by revolving the region bounded between  $y = 2x$  and  $y = x^2$  around each of the axes below.

- a.  $x = 0$ .
- b.  $x = -1$ .
- c.  $y = 0$ .
- d.  $y = 5$ .

**Problem 2.** Use the shell method to set up an integral to find the volume of the solid of revolution formed by revolving the region bounded between  $y = x$ ,  $y = 2x$  and  $x = 1$  around each of the axes below.

- a.  $x = 0$
- b.  $x = 1$
- c.  $y = 0$
- d.  $y = -2$

**Problem 3.** Fill in each entry of the table below with two pieces of information: the orientation of slices (vertical or horizontal) and the variable of integration ( $x$  or  $y$ ) to be used given the method and orientation of the axis of revolution.

	Disk/washer method	Shell method
Horizontal axis		
Vertical axis		