

### HW 7.3

Use the shell method to set up and evaluate the integral that gives the volume of the solid generated by revolving the plane region about the y-axis.

6.  $y = \frac{1}{2}x^2$ ,  $y = 0$ ,  $x = 6$

9.  $y = 4x - x^2$ ,  $x = 0$ ,  $y = 4$

10.  $y = 2x$ ,  $y = 4$ ,  $x = 0$

Use the shell method to set up and evaluate the integral that gives the volume of the solid generated by revolving the plane region about the x-axis.

18.  $y = x^2$ ,  $x = 0$ ,  $y = 9$

19.  $x + y = 4$ ,  $y = x$ ,  $y = 0$

Use the shell method to find the volume of the solid generated by revolving the plane region about the given line.

21.  $y = x^2$ ,  $y = 4x - x^2$ , about the line  $x = 4$

24.  $y = \sqrt{x}$ ,  $y = 0$ ,  $x = 4$ , about the line  $x = 6$

Use the disk or the shell method to find the volume of the solid generated by revolving the region bounded by the graphs of the equations about each given line.

27.  $y = x^3$ ,  $y = 0$ ,  $x = 2$

- a) the x-axis    b) the y-axis    c) the line  $x=4$

28.  $y = \frac{10}{x^2}$ ,  $y = 0$ ,  $x = 1$ ,  $x = 5$

- a) the x-axis    b) the y-axis    c) the line  $y=10$