

Find the volumes of the solids of revolution. Do each problem two ways...a) with disks, and b) with shells.

1. The region bounded by the curves  $y = x^3$ ,  $y = 0$ ,  $x = 1$ , and  $x = 2$ ; revolved about the  $x$ -axis.
2. The region bounded by the curves  $y = x^3$ ,  $y = 0$ ,  $x = 1$ , and  $x = 2$ ; revolved about the  $y$ -axis.
3. The region bounded by the curves  $y = x^2$ ,  $y = 0$ , and  $x = 1$ ; revolved about the  $x$ -axis.
4. The region bounded by the curves  $y = x^2$ ,  $y = 0$ , and  $x = 1$ ; revolved about the  $y$ -axis.
5. The region bounded by the curves  $y = e^x$ ,  $y = 1$ , and  $x = 2$ ; revolved about the  $x$ -axis.
6. The region bounded by the curves  $y = e^x$ ,  $y = 1$ , and  $x = 2$ ; revolved about the  $y$ -axis.
7. The region bounded by the curves  $y = x^2$ ,  $y = 1$ ,  $x = 2$ ; revolved about the  $x$ -axis.
8. The region bounded by the curves  $y = x^2$ ,  $y = 1$ ,  $x = 2$ ; revolved about the  $y$ -axis.
9. The region bounded by the curves  $y = x^2$ ,  $y = 1$ ,  $x = 2$ ; revolved about the line  $y = -1$ .