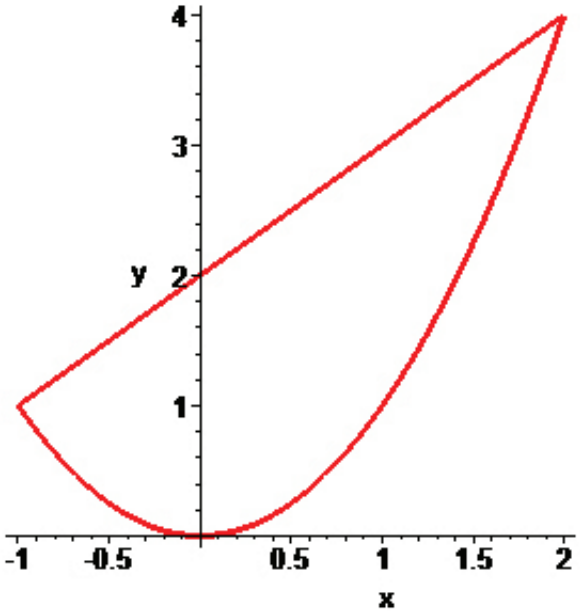
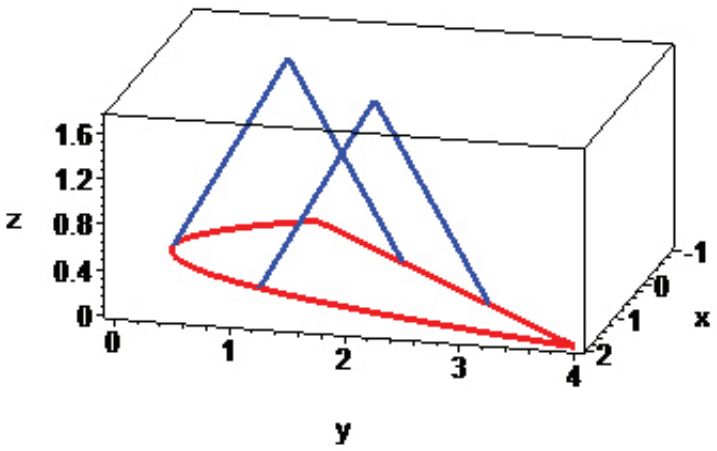
1. Find the volume of the solid whose base is bounded by the graphs of the equations $y = x^2$ *and* $y = x + 2$ and whose cross sections are equilateral triangles perpendicular to the x-axis.





2. Find the volume of the solid whose base is bounded by the graphs of the equations $y = x^2$ *and* $y = x + 2$ and whose cross sections are squares perpendicular to the x-axis.

3. Find the volume of the solid whose base is bounded by the graphs of the equations $y = x^2$ *and* $y = x + 2$ and whose cross sections are isosceles triangles with the hypotenuse perpendicular to the x-axis.

4. Find the volume of the solid whose base is bounded by the graphs of the equations $y = x^2$ *and* $y = x + 2$ and whose cross sections aresemicircles with the diameter perpendicular to the x-axis.