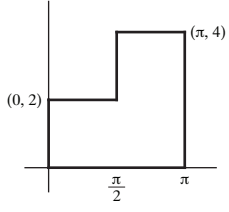


For all of the following problems, graph the shape using Mathematica (except for problem 3), as well as check your answer with Mathematica.

- 1) Use a triple integral to find the volume for $z = 2 - x - y$ above the area bounded by the x -axis, $x = 1$, and $y = x$.
- 2) Use a triple integral to find the volume for $z = x \sin y$ above the area bounded by the x -axis, $x = \pi$, and $y = \pi - x$.
- 3) Use a triple integral to find the volume for $z = \sin x$ above the area shown.

- 4) Use a triple integral to find the volume for $z = x$ above the area bounded by the parabola $x^2 - y = 0$ and the straight line $2x - y + 8 = 0$.
- 5) Use a triple integral to find the volume for $z = 8 - x + y$ above the area bounded by square with vertices $(0, 0)$, $(2, 0)$, $(0, 2)$, and $(2, 2)$.