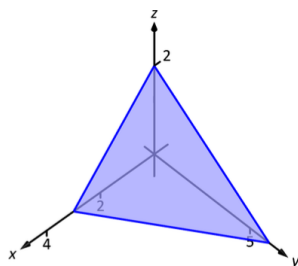


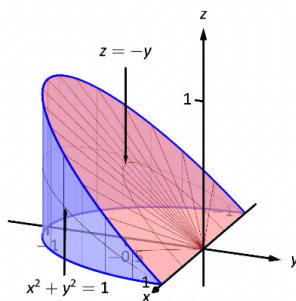
## Math 203 — More triple integrals

**Problem 1.** Let  $D$  be the solid bounded below by the cone  $z = \sqrt{x^2 + y^2}$  and above by the plane  $z = 3$ . Make a sketch of  $D$  and set up the triple integral  $\iiint_D f(x, y, z) dV$  in two ways: using (1)  $dV = dzdydx$  and (2)  $dV = dx dy dz$ .

**Problem 2.** Let  $D$  be the region bounded by  $x = 0, y = 0, z = 0$ , and  $z = 2 - y/3 - 2x/3$  (shown below). Set up the triple integral  $\iiint_D dV$  using the following choices of  $dV$ : (1)  $dzdydx$ , (2)  $dx dy dz$ , and (3)  $dx dz dy$ .



**Problem 3.** Let  $D$  be the region shown below. Set up the triple integral  $\iiint_D dV$  using the following choices of  $dV$ : (1)  $dzdydx$ , (2)  $dx dy dz$ , and (3)  $dy dx dz$ .



**Problem 4.** Let  $D$  be the region shown below. Set up the triple integral  $\iiint_D dV$  using the following choices of  $dV$ : (1)  $dy dz dx$  and (2)  $dz dy dx$ . *Hint: the second setup is trickier than previous problems; you'll need to write it as a sum of two triple integrals.*

