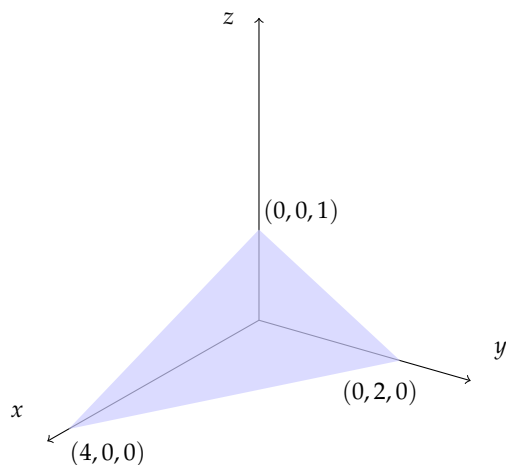1. Let R be the three dimensional region bounded by the planes $x = 0$, $y = 0$, $z = 0$, and $x + 2y + 4z = 4$.

   (a) Give a (rough) sketch of the region, and plot three points.

   (b) Set up (but don't solve) an integral giving the volume of the region...

      (i) In the order $dxdydz$

       Answer.

   $$\int_0^1 \int_0^{2-2z} \int_0^{4-2y-4z} 1 \, dxdydz$$

   ☐

      (ii) In the order $dzdydx$

       Answer.

   $$\int_0^1 \int_0^{2-x/2} \int_0^{1-x/4-y/2} 1 \, dzdydx$$

   ☐

   (c) Solve one of the integrals above to find the volume of R.

      Answer.

   $$\frac{4}{3}$$

   ☐