12. (7 points) Consider the solid which is bounded by \(3x + 4y + 2z = 12\) and the three coordinate planes. Find the volume of the solid. Set up the integral, but do NOT compute the integral.

\[
\text{Vol} = \int \int \int (6-2y-\frac{3}{4}x)\,dy\,dx
\]

13. (7 points) Find the volume of the region between \(z = 9 - x^2 - y^2\) and the \(xy\) plane.

\[
\text{Vol} = \int \int \int z = \int \int (9-r^2)\,dr\,dz
\]

\[
= 2\pi \int_0^3 (9r-r^3)\,dr
\]

\[
= 2\pi \left[ \frac{9r^2}{2} - \frac{r^4}{4} \right]_0^3
\]

\[
= 2\pi \left( \frac{81}{2} - \frac{81}{4} \right) = 2\pi \left( \frac{81}{4} - \frac{81}{4} \right) = \frac{81\pi}{2}
\]