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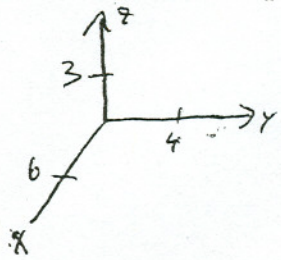
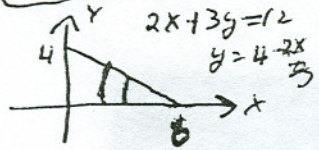
15. Consider the solid which is bounded by $2x + 3y + 4z = 12$ and the three coordinate planes. Find the volume of the solid. Set up the integral, **but do NOT compute the integral.**



$$Vol = \int_0^6 \int_0^{4-\frac{2x}{3}} \frac{12-2x-3y}{4}\, dy\, dx$$



16. Find the volume of the region between $z = 16 - x^2 - y^2$ and the xy plane.

$$Vol = \int_0^{2\pi} \int_0^4 r(16-r^4)\, dr\, d\theta = 2\pi \left[\left(8r^2 - \frac{r^4}{4} \right) \right]_0^4$$

$$= 2\pi \left(8 \cdot 16 - \frac{4^4 \cdot 16}{4} \right) = 2\pi \cdot 4 \cdot 16$$