~~145~~ 165

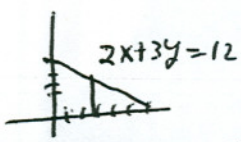
17. Find $\int_0^1 \int_y^1 e^{x^2}\,dx\,dy$ =

$$\int_0^1 \int_0^x e^{x^2}\,dy\,dx = \int_0^1 x e^{x^2}\,dx = \frac{1}{2} e^{x^2}\Big]_0^1$$

$$= \frac{1}{2}[e-1]$$

18. Consider the solid which is bounded by $2x + 3y + 6z = 12$ and the three coordinate planes. The density of the solid at the point (x, y, z) is x. Find the mass of the solid. Set up the integral, **but do NOT compute the integral.**

$$\text{mass} = \int_0^6 \int_0^{\frac{12-2x}{3}} \int_0^{\frac{12-2x-3z}{6}} x \; dz\,dy\,dx$$



$$= \int_0^6 \int_0^{\frac{12-2x}{3}} \int_0^{\frac{12-2x-3z}{6}} x \; dz\,dy\,dx$$