10. $z = 9 - x^2 - y^2 \quad z = 0 \quad \rho = kz$

$$m = \int_{x=-3}^{x=3} \int_{y=-\sqrt{9-x^2}}^{y=\sqrt{9-x^2}} \int_{z=0}^{z=9-x^2-y^2} (kz)\, dz\, dy\, dx$$

y's

$z = 9 - x^2 - y^2$

$0 = 9 - x^2 - y^2$

$y^2 = 9 - x^2$

$y = \pm\sqrt{9-x^2}$

$$M_{yz} = \int_{x=-3}^{x=3} \int_{y=-\sqrt{9-x^2}}^{y=\sqrt{9-x^2}} \int_{z=0}^{z=9-x^2-y^2} (x \cdot kz)\, dz\, dy\, dx$$

$$M_{xz} = \int_{x=-3}^{x=3} \int_{y=-\sqrt{9-x^2}}^{y=\sqrt{9-x^2}} \int_{z=0}^{z=9-x^2-y^2} (y \cdot kz)\, dz\, dy\, dx$$

x's

$z = 9 - x^2 - y^2$

$0 = 9 - x^2 - 0^2$

$x^2 = 9$

$x = \pm 3$

$$M_{xy} = \int_{x=-3}^{x=3} \int_{y=-\sqrt{9-x^2}}^{y=\sqrt{9-x^2}} \int_{z=0}^{z=9-x^2-y^2} (z \cdot kz)\, dz\, dy\, dx$$

$$I_x = \iiint_R (y^2+z^2)\, kz \; dz\, dy\, dx$$

$$I_y = \iiint_R (x^2+z^2)\, kz \; dz\, dy\, dx$$

$$I_z = \iiint_R (x^2+y^2)\, kz \; dz\, dy\, dx$$