Een zwaartepunt

6. $M = \pi \cdot \int_0^1 x \cdot (f(x))^2 \, dx = \pi \cdot \int_0^1 x \cdot (\sqrt{1-x^2})^2 \, dx = \pi \cdot \int_0^1 x \cdot (1-x^2) \, dx = \pi \cdot \int_0^1 (x - x^3) \, dx =$

$\pi \cdot \left[\frac{1}{2}x^2 - \frac{1}{4}x^4\right]_0^1 = \pi \cdot (\frac{1}{2} \cdot 1^2 - \frac{1}{4} \cdot 1^4) - 0 = \frac{1}{4}\pi$

$V = ½ \cdot {}^4/_3 \, \pi \cdot 1^3 = {}^2/_3 \, \pi$

$x_z = \frac{{}^1/_4 \, \pi}{{}^2/_3 \, \pi} = {}^1/_4 \cdot {}^3/_2 = {}^3/_8$