z definice:

$$M = \int_0^{\frac{1}{\sqrt{2}}}\int_0^{\frac{1}{\sqrt{2}}-x} 2\cdot\sqrt{2}\, y\, dy\, dx = \cancel{2}\cdot\sqrt{2}\int_0^{\frac{1}{\sqrt{2}}}\left[\frac{y^2}{\cancel{2}}\right]_0^{\frac{1}{\sqrt{2}}-x} dx =$$

$$= \sqrt{2}\int_0^{\frac{1}{\sqrt{2}}}\left(\frac{1}{\sqrt{2}}-x\right)^2 dx = \frac{1}{2}\int_0^{\frac{1}{\sqrt{2}}}\left[\frac{1}{2}-\frac{2}{\sqrt{2}}x+x^2\right]dx = \frac{1}{2}\left[\frac{1}{2}x-\frac{1}{\sqrt{2}}x^2+\frac{x^3}{3}\right]_0^{\frac{1}{\sqrt{2}}} =$$

$$= \frac{\sqrt{2}}{3.2.\sqrt{2}} = \frac{1}{3.2} = \underline{\underline{\frac{1}{6}}}.$$

$$x_0 = \frac{1}{\frac{1}{6}}\int_0^{\frac{1}{\sqrt{2}}}\int_0^{\frac{1}{\sqrt{2}}-x} x.y.2.\sqrt{2}\, dy\, dx = 12.\sqrt{2}\int_0^{\frac{1}{\sqrt{2}}}\int_0^{\frac{1}{\sqrt{2}}-x} x.y\, dy\, dx =$$

$$= \overset{6}{\cancel{12}}.\sqrt{2}\int_0^{\frac{1}{\sqrt{2}}} x\left[\frac{y^2}{\cancel{2}}\right]_0^{\frac{1}{\sqrt{2}}-x} dx = 6.\sqrt{2}\int_0^{\frac{1}{\sqrt{2}}} x\left(\frac{1}{\sqrt{2}}-x\right)^2 dx =$$

$$= 6.\sqrt{2}\int_0^{\frac{1}{\sqrt{2}}} \frac{1}{2}x - \frac{2}{\sqrt{2}}x^2 + x^3\, dx = 3\sqrt{2}\left[\frac{x^2}{2}-\frac{2\sqrt{2}}{3}x^3+\frac{2x^4}{4}\right]_0^{\frac{1}{\sqrt{2}}} =$$

$$= 3.\sqrt{2}\left[\frac{1}{4}-\frac{1}{3}+\frac{1}{8}\right] = 3\sqrt{2}.\frac{12-16+6}{48} = 3.\sqrt{2}.\frac{2}{48} = \underline{\underline{\frac{\sqrt{2}}{8}}}.$$

$$y_0 = \frac{1}{\frac{1}{6}}\int_0^{\frac{1}{\sqrt{2}}}\int_0^{\frac{1}{\sqrt{2}}-x} 2\sqrt{2}\, y^2\, dy\, dx = \frac{12\sqrt{2}}{3}\int_0^{\frac{1}{\sqrt{2}}}\left[y^3\right]_0^{\frac{1}{\sqrt{2}}-x} dx =$$

$$= 4\sqrt{2}\int_0^{\frac{1}{\sqrt{2}}} \frac{1}{2\sqrt{2}} - \frac{3}{2}x + \frac{3}{\sqrt{2}}x^2 - x^3\, dx = 4\sqrt{2}\left[\frac{\sqrt{2}}{4}x - \frac{3}{4}x^2 + \frac{\cancel{3}\sqrt{2}}{\cancel{\sqrt{2}}}x^3 - \frac{x^4}{4}\right]_0^{\frac{1}{\sqrt{2}}} =$$