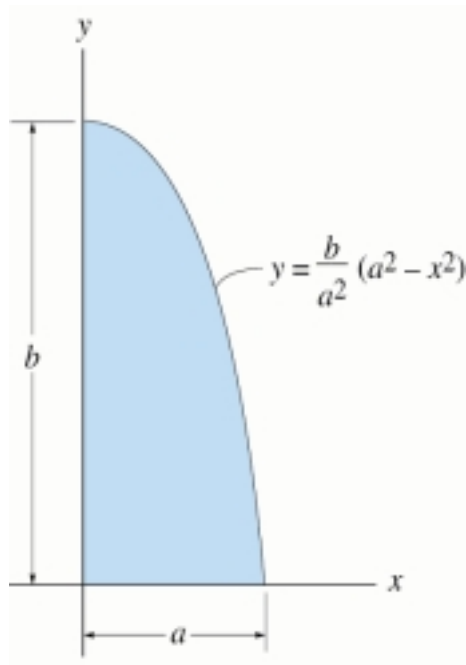


MathCAD Example: Find the centroid of the parabolic area shown below using integration.



$$\frac{\int_0^a \frac{b}{a^2} \cdot (a^2 - x^2) \cdot x \, dx}{\int_0^a \frac{b}{a^2} \cdot (a^2 - x^2) \, dx} \rightarrow \frac{3}{8} \cdot a \quad (\text{xbar})$$

$$\frac{\int_0^a \left[\frac{b}{a^2} \cdot (a^2 - x^2) \right]^2 \cdot \frac{1}{2} \, dx}{\int_0^a \frac{b}{a^2} \cdot (a^2 - x^2) \, dx} \rightarrow \frac{2}{5} \cdot b \quad (\text{ybar})$$