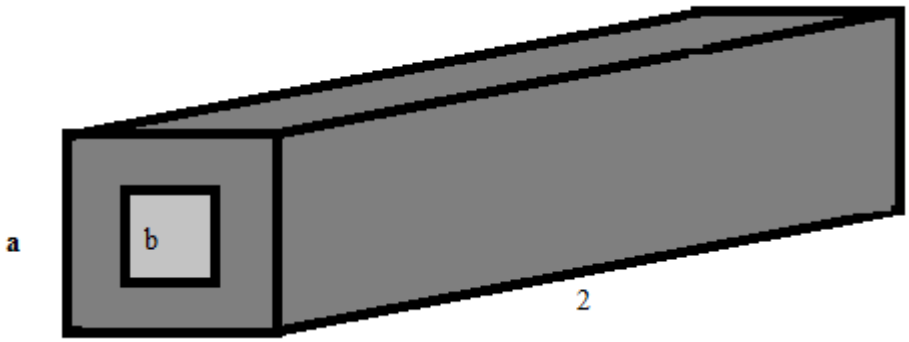
Answer on Question #65074- <Math>-<Geometry>

a metal hallow bar whose cross section and dimensions weighs 8000 kg/cubic meter and measures 2 meter in length, determine the mass of the metal bar with a square hole section



ρ=8000kg/m^3;

l=2 – the length of the bar

Solution:

1) If the side of the square base of the bar is **a** and the side of the square hole is **b –** the bars base area is

$$\mathbf{S=a^2-b^2}$$

2) The volume of the bar could be found as

$$\mathbf{V=(a^2-b^2)*l=2(a^2-b^2)}$$

3) Thus, if $\rho = m/V \rightarrow$ **=** $\mathbf{\rho V= 8000*2*(a^2-b^2)=16000(a^2-b^2)}$

Answer: $\mathbf{m=16000(a^2-b^2)}$