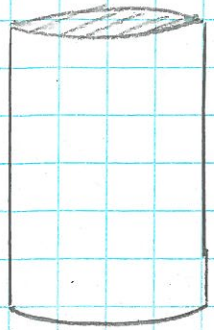
Water



Volume, V_w

Mass, m_w

density $\rho_w = 1000 \frac{kg}{m^3}$

Gold

Volume $V_g = 100\ cm^3$

Mass, m_g

density, $\rho_g = 19{,}300 \frac{kg}{m^3}$

Now, $m_w = m_g$

$\rho_w V_w = \rho_g V_g$

So: $V_w = V_g\left(\frac{\rho_g}{\rho_w}\right) = \underline{1930\ cm^3}$