A liter of whole milk has a mass of 1032 g. It contains 4% butterfat by volume. The specific gravity of butterfat is 0.865 g/cc. What is the density in g/cc of the fat free "skimmed-milk"?

$$1\ liter = 1000\ cm^3$$

Whole milk contains 4% butterfat by volume, therefore volume of butterfat equals:

$$V_b = 0.04 * 1000\ cm^3 = 40\ cm^3$$

And its mass:

$$m_b = V_b * \rho_b = 40\ cm^3 * 0.865 \frac{g}{cm^3} = 34.6\ g$$

Therefore, mass of pure milk in whole milk equals:

$$m_m = 1032g - 34.6\ g = 997.4\ g$$

And its volume:

$$V_m = 1000\ cm^3 - 4cm^3 = 960\ cm^3$$

Therefore, density of the fat free milk equals:

$$\rho = \frac{m_m}{V_m} = \frac{997.4\ g}{960\ cm^3} = 1.039 \frac{g}{cm^3}$$

Answer: $1.039 \frac{g}{cm^3}$