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| **Density** = weight (mass) per volume.**Density =** $\frac{mass}{volume}$**Examples** $\frac{lbs}{ft^{3}}$ **or** $\frac{kg}{cm^{3}}$**Volume types:** $in^{3} m^{3}$ **gallons, liters, fluid oz.****Weight types: lbs. g, ounces** | **Population density**= divide number of PEOPLE by AREA .**Population density =** $\frac{number of people}{square miles}$ |
| Example 1:Mercury metal is poured into a graduated cylinder that holds exactly 22.5 ml. The mercury used to fill the cylinder weighs 306.0 g. From this information, calculate the density $(\frac{g}{ml})$ of mercury.**d =** $\frac{mass}{volume}$**d =** $\frac{306.0g}{22.5ml}$ | Example 5:A city has a population of 6,688 people. The city is approximately 7.267 square miles. How many people per square mile live in the city?**Population density =** $\frac{number of people}{square miles}$ |
| Example 2: A rectangular block of copper metal has dimensions of 8.4 cm by 5.5 cm by 4.6 cm. The density of copper is $8.86 g=1 cm^{3}$ What is the weight of the block? | Example 6:What is the population density in our school?The population is 3000 students, and the school is approximately 323,727 square feet. |
| Example 3:Some silver coins weigh 2500 g. The density of silver is 10.5 g/cm3. What is the volume in $cm^{3}$? | Example 7: In Manhattan, there are 100,000 people per CoffeeStops. Manhattan has approximately 1,602,000 people. How many CoffeeStops are there? |