Answer on Question #64939 - Chemistry - General Chemistry

Question: The recommended daily allowance of calcium (RDA) for a human adult is 800.0 mg/day. If one cup of 2% milk (d=1.032 g/mL) contains 240.0 mg of calcium, how many grams of milk must you drink a day to get your RDA of calcium?

Solution: Given that a cup of 2% milk contains 240.0 mg of calcium. It means that a human must drink $3\frac{1}{3}$ cups of 2% milk per day for get his RDA of calcium. In metric system the cup's volume is 250 ml, so $3\frac{1}{3}$ cups are equal to $833\frac{1}{3}$ ml ($3\frac{1}{3} * 250 = 833\frac{1}{3}$). The mass of $833\frac{1}{3}$ ml of 2% milk is 860 g ($mass = volume * density = 833\frac{1}{3} * 1.032 = 860.0\ g$).

Note: In non-metric system the cup's volume isn't 250 ml. If you use some non-metric system you must recalculate the mass of milk as in example above. See the volume of cup in different system here https://en.wikipedia.org/wiki/Cup_(unit)

Answer: An adult human must drink 860.0 g of 2% milk to get his RDA of calcium.