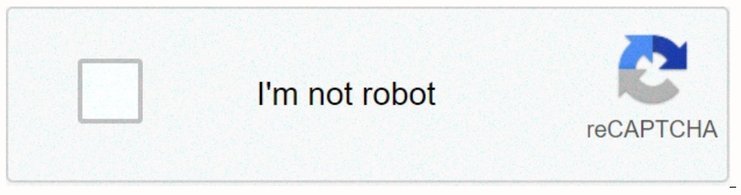

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Measuring density worksheet

Density, mass, and volume are all related to the formula, d = \dfrac{m}{V} where d is density, V is a volume, and m is mass. This can be rearrinked to find volume or mass depending on the quantities given to you and what the question asks you to find. Mass is typically measured in grams, g or kilograms, kg, whereas, volume is typically measured in cubic centimeters, cm^3, or cubic meter, m^3. This means that when dividing mass by volume, the passed units are typically cubic centimeters (g/cm^3), or kilograms per cubic meter (kg/cm^3). These are complex units (for more information, see Conversion Editions). A useful way to remember how to calculate density, mass, or volumes is to use the triangles below. The horizontal line means division, and the \times icon means multiplying. We then cover the one we want to find (represented by a red circle) and perform the calculation with the other two values from the triangle. The object has a mass of 570 grams and a volume of 2280 cm^3. Calculate his density. [2 signs] We're looking for density, so build the triangle and cover d, we see we've got to divide the mass by the volume. So \text{density} = \dfrac{570}{2280} = 0.25 g/cm^3 The cat has a volume of 0.004 m ^3 and a density of 980 kg/mr^3. Calculate the cat's mass. [2 signs] we're looking for mass, so build the triangle and cover M, we see that to calculate the mass we must multiply the density by volume. So \text{ mass } = 980 \double 0.004 = 3.92 kg bottle of water has a density of 1000 kg / mel ^ 3 mass of 0.5 kg. Calculate the volume of the water bottle and give your answer in liters. [2 signs] We're looking for volume, so covering V, we've got to divide the mass by the density. So \text{ Volume } = \dfrac{0.5}{1000} = 0.0005 m^3 Multiplying it by 1000 to convert liters, Gives us the final answer, \text{ Volume } = 0.5 L we calculate the volume, so by covering V we can see from the triangle above that we need to divide m by d. Before we can do that, however, we need to make sure we have the right units. Mass is in kilograms, but the density is in gram per cubic centimeter. That means we have to convert the pounds into grams first before we go any further. 2 kg = 2000 g therefore, the volume of olive oil can be calculated as follows: \text{Volume} = 2000 \div 0.925 = 2162cm^3 We calculate the mass, so by covering m we can see from the triangle above that we need to multiply d by V. However, we do not know the volume, But we know that the shape is a cube with a side length of 7 m, so the volume of the cube is: 7 \times 7 \times 7 = 343 m^3 Now that we know the volume, we can multiply it densely to calculate the mass : \text{Mass} = 343\times 10,800,000 = 3,704,400,000 kg To calculate the answer here, we need to remember the formula: \text{ On this question, The mass is 2460 kg and the volume is 1.2 m^3, so we simply need to replace these values with the formula as follows: \text{ Density} = 2460 kg \div \, 1.2 m ^3 = 2050 kg/m*3A) In order to calculate the total volume of the block, we need to add the metal volume A and the metal volume B. Although we don't have the volume of any metal, we got their masses and their density, so we could calculate the volume of each metal accordingly. By rearranging the density formula, or by using the triangle, We can figure out how to calculate the volume: \text{density} = \text{ mass}\div \text{ volume} like this: \text{volume} = \text{ mass}\div \text{ density} The metal volume A can be calculated as follows: 1200 g \div \, 5 g/cm^3 = 240 cm^3 The metal volume B can be calculated as follows: 600 g \div 3 g/cm^3 = 200 cm^3 Therefore, if metal A has a volume of 240 cm ^3 and B has a volume of 200 cm ^3, then their combined volume is simple: 240 cm^3 + 200 cm^3 = 440 cm^3 b) as we know wish A), the newly created block has a volume of 440 cm^3 We know that the block of metal A was 1200 grams and the mass of metal B was 600 grams, So the mass of the block is: 1200 g + \, 600 g = 1800 g The density of this block can be calculated by dividing the mass by volume as follows: 1800 g \div \, 440 cm ^3 = 4.09 g/cm^3 This is a pretty challenging question with a lot of calculations going on. Since we received the mass of metal C and the ratio of metal A and metal B in metal C, therefore we can calculate the mass of metal A and metal B. If the ratio of metal A to metal B is 3:7, it means that the \frac{3}{10} of the mass of metal C comes from metal A and the remaining \frac{7}{10} is metal B. (We're running in tenths here because the ratio amount is 10.) The mass of metal A can be calculated as follows: 2500 g \times \dfrac{3}{10} = 750 g The mass of metal B can be calculated as follows: 2500 g \times \dfrac{7}{10} = 1750 g We now also know the mass and density of both metals A and B, meaning we can work on their respective volumes. 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