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Density triangle worksheet

The density, mass and volume are related by the formula, $d = \frac{m}{V}$, where d is density, V is the volume and m is the mass. This can be rearranged to find volume or mass, depending on what quantities you are allocated and what the question asks you to find. The mass is normally measured in grams, g or kilograms, kg and the volume is usually measured in cubic centimetres, cm^3 or cubic metres, m^3 . This means that the resulting units are usually grams per cubic centimetre (g/cm^3) or kilograms per cubic metre (kg/m^3) when dividing the mass by volume. These are composite units (see conversion preview for more information). A convenient way to remember how to calculate density, mass or volume is to use the triangles listed below. A horizontal line means subject matter, and the times symbol means multiplying. Then we cover the one we want to find (represented by a red circle) and perform a calculation with two other values from the triangle. The mass of the object is 570 g and the volume is 2280 cm^3 . Calculate its density. [2 characters] We are looking for density, so when building a triangle and covering d , we see that we need to divide the mass by volume. Thus, $\text{density} = \frac{570}{2280} = 0.25 \text{ g}/\text{cm}^3$ The volume of the cat is 0,004 m^3 and the density is 980 kg/m^3 . Calculate the mass of the cat. [2 characters] We are looking for mass, so when building a triangle and covering m , we can see that in order to calculate the mass we need to multiply the density by volume. So $\text{Mass} = 980 \times 0.004 = 3.92 \text{ kg}$ The water density of the bottle is 1000 kg/m^3 and the mass is 0,5 kg. Calculate the volume of the water bottle by answering in liters. [2 characters] We are looking for volume, so when covering the V , we need to divide the mass by density. So $\text{Volume} = \frac{0.5}{1000} = 0.0005 \text{ m}^3$ Multiply it by 1000 convert to liters, the final answer is given, $\text{Volume} = 0.5 \text{ L}$ We calculate volume, so when we cover V we see from the triangle above, which we need to divide from d . However, before we can do this, we need to ensure that we have the right units. The mass is in kilograms, but the density is in grams per cubic centimeter. This means that before we continue, we must first convert kilograms into grams. $2 \text{ kg} = 2000 \text{ g}$ Therefore the volume of olive oil can be calculated as follows: $\text{Volume} = 2000 \div 0.925 = 2162 \text{ cm}^3$ We calculate the mass, so when we cover the triangle above we can see that we need to multiply d from V . However, we do not know the volume, but we know that the shape is a cube, with a lateral length of 7 m, so the volume of the cube is: $7 \times 7 \times 7 = 343 \text{ m}^3$ Now, when we know the volume, we can multiply it by density to calculate the mass: $\text{Mass} = 343 \times 10,800,000 = 3,704,400,000 \text{ kg}$ To calculate the answer here, we need to remember the formula: $\text{density} \times \text{volume} = \text{mass}$ for this subject, mass is 2460 kg and the volume is 1.2 m^3 , so we just need to change the following values to the formula as follows: $\text{Density} = 2460 \text{ kg} \div 1.2 \text{ m}^3 = 2050 \text{ kg}/\text{m}^3$ a) To calculate the total volume of the block, we need to add the volume of metal A and the volume of metal B. Although we do not have a volume of metal, we were given their mass and density, so we can calculate the volume of each metal accordingly. After rearranging the density formula or using a triangle, we can figure out how to calculate the volume: $\text{density} = \frac{\text{mass}}{\text{volume}}$ So: $\text{volume} = \frac{\text{mass}}{\text{density}}$ Metal Volume A can be calculated as follows: $1200 \text{ g} \div 5 \text{ g}/\text{cm}^3 = 240 \text{ cm}^3$ The volume of metal B can be calculated as follows: $600 \text{ g} \div 3 \text{ g}/\text{cm}^3 = 200 \text{ cm}^3$ Therefore, if the volume of metal A is 240 cm^3 and the volume B is 200 cm^3 , then their total volume is simply: $240 \text{ cm}^3 + 200 \text{ cm}^3 = 440 \text{ cm}^3$ b) As we know from question (a), the volume of the newly formed block is 440 cm^3 . We know that the mass of metal A was 1200 g and metal B was 600 g, so the weight of the block is: $1200 \text{ g} + 600 \text{ g} = 1800 \text{ g}$ The density of this block can be calculated by dividing the mass by volume as follows: $1800 \text{ g} \div 440 \text{ cm}^3 = 4.09 \text{ g}/\text{cm}^3$ This is a rather complex issue with multiple calculations. Since we were given metal C mass and metal A-metal B ratio metal C, so 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 $\frac{3}{10}$ metal mass C is obtained from metal A, and the remaining $\frac{7}{10}$ is metal B. (We are here in tenths of proportions, because the ratio amount is 10.) Metal Mass A can be calculated as follows: $2500 \times \frac{3}{10} = 750 \text{ g}$ Metal B mass can be calculated as follows: $2500 \times \frac{7}{10} = 1750 \text{ g}$ We now know the mass and density of both metals A and B, which means that we can figure out their respective volumes. Because $\text{density} = \frac{\text{mass}}{\text{volume}}$ then $\text{volume} = \frac{\text{mass}}{\text{density}}$ The volume of metal A can be calculated as follows: $750 \text{ g} \div 3.2 \text{ g}/\text{cm}^3 = 234.375 \text{ cm}^3$ Volume of Metal A can be calculated as follows: $1750 \text{ g} \div 5.5 \text{ g}/\text{cm}^3 = 318.18 \text{ cm}^3$ If the metal volume of A is 234.375 cm^3 and the volume of metal B is 318.18 cm^3 , then their total volume is the volume of metal C. Metal volume C = $234.375 + 318.18 = 552.5568 \text{ cm}^3$ We now know the mass and volume of metal C, so now we can calculate its density. Density metal C = $2500 \text{ g} \div 552.5568 \text{ cm}^3 = 4.5 \text{ g}/\text{cm}^3$ Try to view the card on this topic. Sign up to ---- it for free ---- OR review activities include a density triangle to fill and that the student fully asks how to calculate the mass, volume and density using a triangle. Triangle.

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