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| |  | | --- | | 1) What is the [density](javascript:def('/Glossary/glossaryterm.aspx?word=Density',%20500,%20500);) of a piece of wood that has a [mass](javascript:def('/Glossary/glossaryterm.aspx?word=Mass',%20500,%20500);) of 25.0 grams and a [volume](javascript:def('/Glossary/glossaryterm.aspx?word=Volume',%20500,%20500);) of 29.4 cm3? |  |  | | --- | |  |  |  |  | | --- | --- | |  |  |  |  | | --- | |  |  |  | | --- | | 2) A piece of wood that measures 3.0 cm by  6.0 cm by 4.0 cm has a [mass](javascript:def('/Glossary/glossaryterm.aspx?word=Mass',%20500,%20500);) of 80.0 grams. What is the [density](javascript:def('/Glossary/glossaryterm.aspx?word=Density',%20500,%20500);) of the wood? Would the piece of wood float in water?  (volume = *L* x *W* x *H*) |  |  | | --- | | 3) A cup of gold colored metal beads was measured to have a mass 425 grams. By water displacement, the [volume](javascript:def('/Glossary/glossaryterm.aspx?word=Volume',%20500,%20500);) of the beads was calculated to be 48.0 cm3. Given the following densities, identify the metal.    Gold: 19.3 g/mL  Copper: 8.86 g/mL Bronze: 9.87 g/mL |  |  |  | | --- | --- | |  |  |  |  | | --- | | 4) I threw a plastic ball in the pool for my dog to fetch. The [mass](javascript:def('/Glossary/glossaryterm.aspx?word=Mass',%20500,%20500);) of the ball was 125 grams. What must the [volume](javascript:def('/Glossary/glossaryterm.aspx?word=Volume',%20500,%20500);) be to have a [density](javascript:def('/Glossary/glossaryterm.aspx?word=Density',%20500,%20500);) of 0.500 g/mL. (I want it to float of course!) |  |  |  | | --- | --- | |  |  |  |  | | --- | | 5) After throwing the ball in the pool for my dog, the ball sprung a leak and began to fill with water. How many mL of water can the ball absorb before the ball sinks? |  |  |  | | --- | --- | |  |  |  |  | | --- | | 6) The [volume](javascript:def('/Glossary/glossaryterm.aspx?word=Volume',%20500,%20500);) of a [solution](javascript:def('/Glossary/glossaryterm.aspx?word=Solution',%20500,%20500);) was measured in a graduated [cylinder](javascript:def('/Glossary/glossaryterm.aspx?word=Cylinder',%20500,%20500);) (shown below). If the [mass](javascript:def('/Glossary/glossaryterm.aspx?word=Mass',%20500,%20500);) of [solution](javascript:def('/Glossary/glossaryterm.aspx?word=Solution',%20500,%20500);) is measured to be 60.75 grams, what is the [density](javascript:def('/Glossary/glossaryterm.aspx?word=Density',%20500,%20500);) of the solution? |  |  | | --- | | **http://www.algebralab.org/img/62f8e37a-56a8-4631-af2e-630ab945d8e4.gif** |  |  |  | | --- | --- | |  |  |  |  |  | | --- | --- | |  |  |  |  | | --- | | 7) An ice cube measuring 5.80 cm by 5.80 cm by 5.80 cm has a [density](javascript:def('/Glossary/glossaryterm.aspx?word=Density',%20500,%20500);) of 0.917 g/mL. What is the mass? |  |  |  | | --- | --- | |  |  |  |  | | --- | | 8) Gasoline is a non-polar [liquid](javascript:def('/Glossary/glossaryterm.aspx?word=Liquid',%20500,%20500);) that will float on water. 450 grams of gasoline is spilled into a puddle of water. If the [density](javascript:def('/Glossary/glossaryterm.aspx?word=Density',%20500,%20500);) of  gasoline is 0.665 g/mL, what [volume](javascript:def('/Glossary/glossaryterm.aspx?word=Volume',%20500,%20500);) of gasoline is spilled? |  |  |  | | --- | --- | |  |  |  |  | | --- | | 9) The [density](javascript:def('/Glossary/glossaryterm.aspx?word=Density',%20500,%20500);) of aluminum is 2.70 g/mL. If the [mass](javascript:def('/Glossary/glossaryterm.aspx?word=Mass',%20500,%20500);) of a piece of aluminum is 244 grams, what is the [volume](javascript:def('/Glossary/glossaryterm.aspx?word=Volume',%20500,%20500);) of the aluminum? | |

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|  | **10)** A Mind Bender Problem |
|  | |  |  | | --- | --- | |  |  |  |  | | --- | | A little aluminum boat (mass of 14.50 g) has a [volume](javascript:def('/Glossary/glossaryterm.aspx?word=Volume',%20500,%20500);) of 450.00 cm3. The boat is place in a small pool of water and carefully filled with pennies. If each penny has a [mass](javascript:def('/Glossary/glossaryterm.aspx?word=Mass',%20500,%20500);) of 2.50 g, how many pennies can be added to the boat before it sinks? |  |  | | --- | |  |  |  |  | | --- | --- | |  |  | |