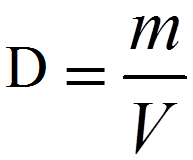
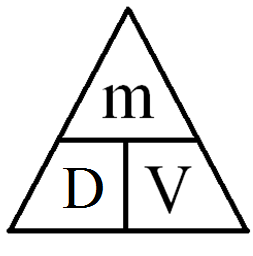
**Density Practice!** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_

**Use the density equation at right to solve the following**

**problems.** *Don’t forget to show full GUESS for each problem.*



FYI:

* Water has a density of about 1 g/mL and if something floats in water it must have a density of less than 1 g/mL. If something has a density greater than that, it will sink.
* The eraser on the end of your pencil is about 1 cm3.
* 1 cm3 = 1 mL so 1 g/cm3 = 1 g/mL

**Example Problem:**

A gas tank holds 50 L. If the density of gasoline is 0.7 g/mL, how much mass will the tank of gas have?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **G**ivens | **U**nknown | **E**quation | **S**ubstitute | **S**olve |
|  |  |  |  |  |

1. A 150 g piece of ice falls off an icicle and falls into a lake. If the icicle has a volume of 163 cm3, will the ice sink or float?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **G**ivens | **U**nknown | **E**quation | **S**ubstitute | **S**olve |
|  |  |  |  |  |

1. Sometimes new kittens have to be given milk from a dropper if they are away from their mother. What is the mass of 10 mL of milk if the density of milk is 1.03 g/mL?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **G**ivens | **U**nknown | **E**quation | **S**ubstitute | **S**olve |
|  |  |  |  |  |

1. A blacksmith was making a horseshoe when a 100 cm3 piece of iron flew off. If the density of iron is 7.8 g/cm3 then what is the mass of that piece of iron?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **G**ivens | **U**nknown | **E**quation | **S**ubstitute | **S**olve |
|  |  |  |  |  |

1. You have a piece of jewelry that you were told was pure gold. You decide to check. You know that the density of pure gold is 19.3g/cm3. You measure the volume of the piece of jewelry to be 3.6cm3, and the mass to be 53g. Is the jewelry pure gold? Why or why not?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **G**ivens | **U**nknown | **E**quation | **S**ubstitute | **S**olve |
|  |  |  |  |  |

1. Platinum is a very popular metal for jewelry and has a density of 21.4 g/cm3. A platinum ring has a mass of 15 g. What is its volume?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **G**ivens | **U**nknown | **E**quation | **S**ubstitute | **S**olve |
|  |  |  |  |  |

1. From #4 you learned the density of gold. If you had a gold ring that had the same mass as the platinum ring in #5, what would its volume be?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **G**ivens | **U**nknown | **E**quation | **S**ubstitute | **S**olve |
|  |  |  |  |  |

1. An aluminum block has a mass of 45 g and takes up 16.7 cm3 of space. Will this block of aluminum float in water?

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| --- | --- | --- | --- | --- |
| **G**ivens | **U**nknown | **E**quation | **S**ubstitute | **S**olve |
|  |  |  |  |  |

1. The aluminum block above is hallowed out into a boat shape so that is takes up the same amount of space but only has a mass of 10 g. Will the hollowed out aluminum block float in water now?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **G**ivens | **U**nknown | **E**quation | **S**ubstitute | **S**olve |
|  |  |  |  |  |

1. Osmium is the densest material with a mass of 22.5 g per cm3. If you had a piece of Osmium about the volume of your text book (2400 cm3), how much mass would it have?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **G**ivens | **U**nknown | **E**quation | **S**ubstitute | **S**olve |
|  |  |  |  |  |