

Name: _____

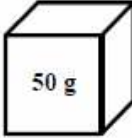
Period: _____

Properties of Matter Review

1. Density	a. A measure of how easily a solid can be scratched.	1. Tensile Strength	A. A unit of volume that equals 1 mL.
2. Brittleness	b. A measurement of how easily a solid can be pounded into thin sheets.	2. viscosity	B. Measure of a fluid's resistance to flow. (How thick a fluid is.)
3. Hardness	c. A measurement of the "compactness" of a substance; ratio of mass to volume.	3. cm^3	C. Measure of how hard it is to break something by pulling.
4. Elasticity	d. Measure of a solid's ability to return to its original shape after stretching.	4. $5 \div$	D. Unit of density.
5. Malleability	e. A measure of how easily a solid will shatter.	5. g/mL	E. In a formula, what the horizontal line means: ex. the line in:


Which object is the less dense?
Why?

Object A



50 g


Object B



50 g

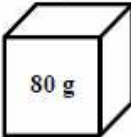
Which object is the less dense?
Why?

Object A



50 g

Object B

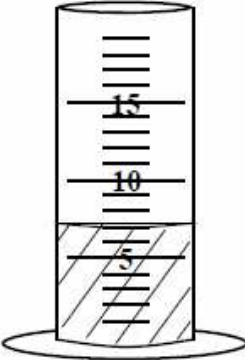
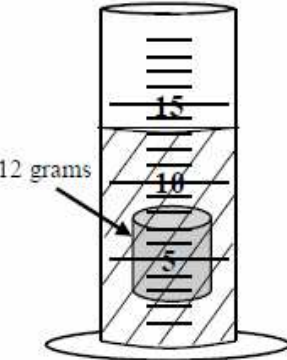


80 g

A 15 g object has a volume of 30 cm^3 . Find its density.

A 12 g object has a volume of 6 mL. Find its density.

A 35 mL object has a density of 2 g/mL. Find its mass.

What is the volume of the object?
What is the object's density?

A rock climber wants a rope with great _____.

An airplane pilot wants a windshield that is _____.

A child bends a toy. It stays bent because it wasn't very _____.

I step on a ball of aluminum foil. The aluminum flattens because it is very _____.

In Alaska, cars need oil that is thinner and flows faster, so during the cold winter it doesn't become too _____.

Balsa wood is very light for its size, so it is not very _____.

We give small children plastic dishes because ceramic dishes are too _____ and break too easily.

A piece of wood floats because it has _____.

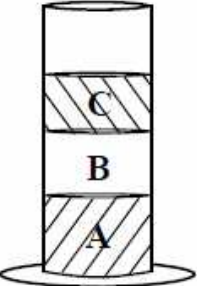
How do you measure the mass of a liquid?

How do you measure the volume of a floating object?

Which is more dense: liquid iron or solid iron?
Which is more dense: gaseous CO_2 or liquid CO_2 ?
Which is more dense: liquid water or solid water?

A 200 g object displaces 150 g of water. Float or sink?
A 300 g object displaces 350 g of water. Float or sink?

A 250 g object displaces 300 g of water. How much cargo can it hold?



Which liquid is which? A, B, or C?
 $D = 1.00 \text{ g/mL} = \text{Liquid } \underline{\hspace{1cm}}$
 $D = 0.75 \text{ g/mL} = \text{Liquid } \underline{\hspace{1cm}}$
 $D = 1.83 \text{ g/mL} = \text{Liquid } \underline{\hspace{1cm}}$

Label the liquid you know.

Draw where ice will be in the column.

In the column, where would a cube of density 0.89 be?

1. Isotope	A. An average of all the isotopes; the mass of average atom.
2. Atomic mass	B. An atom with an equal number of electrons and protons.
3. Atomic #	C. An atom with more or less electrons than protons.
4. Neutral atom	D. A variation of an element with a different number of neutrons.
5. Ion	E. Total number of protons and neutrons in the nucleus.
6. Mass #	F. Number of protons; determines the element.

How many valence electrons?

Helium () _____ Lithium () _____
 Calcium () _____ Aluminum () _____
 Sulfur () _____ Nitrogen () _____

Calcium and _____ have the same reactivity.
 Oxygen and _____ have the same reactivity.
 Helium and _____ have the same reactivity.

Metal or Non-metal?

____ Titanium () ____ Neon ()
 ____ Sodium () ____ Hydrogen ()
 ____ Chlorine () ____ Nickel ()

1. Bohr	A. Discovered that atoms have a nucleus.
2. Dalton	B. Realized that there was a smallest part of matter.
3. Democritus	C. Discovered that electrons are in distinct orbits.
4. Rutherford	D. Discovered the electron.
5. Thompson	E. Theorized that atoms cannot be changed chemically.

8 protons and 10 electrons. *Neutral atom or ion?*
 16 protons and 18 electrons. *Neutral atom or ion?*
 20 protons and _____ electrons. *Neutral atom or ion?*

Give the element abbreviation and charge.
 16 protons and 18 electrons: Element: _____ Charge: _____
 35 protons and 36 electrons: Element: _____ Charge: _____
 Nitrogen with 10 electrons. Charge: _____

A 35 N object feels like 30 N when lowered into a liquid. How much b_____ force does the liquid give?

If put into a more v_____ liquid, the object would feel even lighter.

“Atoms are solid.” Respond and give reasons for your response.

For all of the above:
 Atoms: _____
 Elements: _____
 Molecules: _____
 Compounds: _____

Are these different elements?
 Element A: 17 protons; 18 electrons; 16 neutrons.
 Element B: 18 protons; 18 electrons; 18 neutrons.
Why?

What is wrong with this picture of an atom?

Are these different isotopes of one another?
 Element A: 12 protons; 11 electrons; 13 neutrons.
 Element B: 12 protons; 12 electrons; 14 neutrons.
Why?

Are these different isotopes of one another?
 Element A: 18 protons; 18 electrons; 18 neutrons.
 Element B: 19 protons; 18 electrons; 19 neutrons.
Why?

Element: _____
 # of neutrons: _____
 Mass #: _____
 # of electrons: _____
 # of valence electrons: _____
 It is an ion? _____

Calcium () is in row _____. Calcium has _____ complete electron levels and _____ valence electrons in level _____.

Sulfur () is in row _____. Argon has _____ complete electron levels and _____ valence electrons in level _____.