Card 1

Chapter 17

Question:

Liquid A - 1.4 g/mL; Liquid B - .82 g/mL;
Liquid C - 1.0 g/mL; one liquid you know.
What is it? Also how will they stack? Where
will a 1.6 g/mL object end up?

Card 2

Chapter 17

Question:

Find the density of a 5 milliliter, 25 gram
object.

Card 3

Chapter 17

Question:

A 30 milliliter rock is 15 grams. Find its
density.

Card 4

Chapter 17

Question:

Will a 0.59 g/mL piece of wood float in
water? How about a 1.86 g/mL piece of clay?

Card 5

Chapter 17

Question:

What is denser liquid silver or solid silver?

Card 6

Chapter 17

Question:

A measure of how easily a solid can be
pounded into thin sheets.

Card 7

Chapter 17

Question:

A measurement of the "compactness" of a
substance; ratio of mass to volume.

Card 8

Chapter 17

Question:

Measure of a solid's ability to return to its
original shape after stretching.

| Card 2 | Chapter 17 | | Card 1 | Chapter 17 |

Card 2   Chapter 17

Answer:

D=m/v; m=25g; v=5mL
So D=25/5 = 5 g/mL

Card 1   Chapter 17

Answer:

Liquid C is water (1.0 g/mL). Liquid A will be on the bottom. Liquid B will be on the top. The object is the densest, so it will sink to the bottom.

Card 4   Chapter 17

Answer:

The wood will float because its density is less than water (1.0 g/mL); the clay is denser than the water and will sink.

Card 3   Chapter 17

Answer:

D=m/v; m=15g; v=30mL
So D=15/30 = 0.5 g/mL

Card 6   Chapter 17

Answer:

malleability

Card 5   Chapter 17

Answer:

Solids are more compact, so they are more dense. Water is the only exception (solid water floats, ice).

Card 8   Chapter 17

Answer:

elasticity (a rubber band is more elastic than wood)

Card 7   Chapter 17

Answer:

density (a rock is more dense than foam)

Card 9   Chapter 17

Question:

A measure of how easily a solid will shatter.

Card 10   Chapter 17

Question:

A measure of how easily a solid can be scratched.

Card 11   Chapter 17

Question:

Upward force of a liquid or gas pushing upon something immersed in it.

Card 12   Chapter 17

Question:

Any material that flows; either a gas or a liquid.

Card 13   Chapter 17

Question:

Measure of a fluid's resistance to flow. (How thick a fluid is.)

Card 14   Chapter 17

Question:

Measure of how hard it is to break something by pulling.

Card 15   Chapter 17

Question:

Unit of density.

Card 16   Chapter 17

Question:

Why do you seem to weigh less in water?

Card 10   Chapter 17

Answer:

hardness (glass is harder than soap)

Card 9   Chapter 17

Answer:

brittleness (glass is more brittle than rubber)

Card 12   Chapter 17

Answer:

fluid (air is a fluid, so is oil or water)

Card 11   Chapter 17

Answer:

buoyancy

Card 14   Chapter 17

Answer:

tensile strength (steel has more tensile strength
than a piece of paper).

Card 13   Chapter 17

Answer:

viscosity (honey is more viscous than water)

Card 16   Chapter 17

Answer:

Because the water is pushing up on you. This
is the buoyancy force of water.

Card 15   Chapter 17

Answer:

g/mL OR g/cm^3

Card 17   Chapter 17

Question:

A 400 gram boat displaces 300 grams of
water. Will it sink or float?

Card 18   Chapter 17

Question:

A 125 gram object displaces 150 mL of water.
Will it sink or float?

Card 19   Chapter 17

Question:

A 300 gram boat displaces 400 mL of water.
How much cargo can it carry and still float?

Card 20   Chapter 17

Question:

What is more dense a steel boat
or a block of steel?

Card 21   Chapter 17

Question:

A hot air balloon has a mass of
6,000 kilograms. How much air will it need
to displace to be able to float?

Card 22   Chapter 17

Question:

If I put a balloon in the freezer what will
happen? What gas law does this demonstrate?

Card 23   Chapter 17

Question:

If I take air out of a tire what will happen to its
pressure? Which gas law does this
demonstrate?

Card 24   Chapter 17

Question:

Give Charles' Law mathematically.

Card 18   Chapter 17

Answer:

Float, because it displaces more than its mass
in water (Archimedes Principle).

Card 17   Chapter 17

Answer:

Sink, because Archimedes Principle states that
a 400 gram boat has to displace 400 grams of
water to float.

Card 20   Chapter 17

Answer:

The block of steel. The steel is all the same
density, but the boat seems less dense because
of the shape. It is as if it has "air" in the
middle.

Card 19   Chapter 17

Answer:

100 grams of cargo. 400 mL of water gives
enough buoyancy force to support 400 grams,
but the boat is only 300 grams. So 100 grams
of cargo will not cause the boat to sink.

Card 22   Chapter 17

Answer:

It will shrink. This is Boyle's Law.

Card 21   Chapter 17

Answer:

6,000 kg. Air is a fluid just like water and so
it follows Archimedes Principle.
For an object to float in air it must
displace its weight in air.

Card 24   Chapter 17

Answer:

$V_1/T_1 = V_2/T_2$
OR initial volume divided by initial
temperature equals the final volume divided
by the final temperature.

Card 23   Chapter 17

Answer:

It's pressure will decrease.
This is Charle's Law.