The density of liquids

Liquids have a density too. You can find the density of a liquid by finding its mass on a balance and measuring its volume with a graduated cylinder.

· The mass of atoms, their size, and how they are arranged determine the density of a substance.

· Density equals the mass of the substance divided by its volume.

Question: If given unknown liquids, can you use density to help identify them?

Materials: Cent-o-Gram Balance   Liquid A
          10 mL graduated cylinder   Liquid B

Procedure:
1. Measure the mass of your cylinder. Record the mass in your data table.
2. Pour a specific amount (you decide how much liquid to use) of Liquid A into the graduated cylinder.*Record the volume in your data table*.
3. Find the combined mass of the cylinder and the liquid together. Record the mass (g) in your data table.
4. Find the mass of the liquid by subtracting the mass of the cylinder from the mass of the cylinder and liquid combined.
5. Find the density of the liquid. *Show your work!*
6. **Repeat** steps 2-5 with **Liquid B**.

Data:
*Include units
*To find the mass of the liquid:

Combined Mass of Cylinder + Liquid - Mass of 10ml cylinder (g)

Substance	Mass of 10ml cylinder (g)	Combined Mass of Cylinder + Liquid	↑ Mass of Liquid (g)	Volume of Liquid (ml)	Density (g/mL)
Liquid A	27. 2g	30.5 g		4 ml	
Liquid B	27.2 g	31.1 g		4 ml	

Analysis and Conclusion: (Use the table of known density values on the next page to identify the two liquids.)

What type of liquid is Liquid A?
What is Liquid B?

Density of Various Liquids

Liquid	Density (g/cm^3)	Temperature (°C)
acetone	0.792	20
alcohol (ethyl)	0.791	20
alcohol (methyl)	0.810	0
gasoline	0.66-0.69	
corn syrup	1.38	20
castor oil	0.969	15
olive oil	0.918	15
linseed oil	0.942	15
vegetable oil	0.91-0.93	20
turpentine	0.87	
water	1.00	4