Density Word Problems

On a separate sheet of paper, solve each of the problems below. Show your work including writing the formula, calling out each variable and plugging the numbers into the formula. Your answer should include units of measure and be rounded according to significant figures. Reference densities and formulas listed below may be helpful in some problems.

1. What is the density of an object with a mass of 120g and a volume of 7mL?
2. What is the volume of 220 grams of an object with a density of $55g/cm^3$?
3. We have an object with a density of $620g/cm^3$ and a volume of $75cm^3$. What is the mass of this object?
4. What would be the mass of #3 in kilograms?
5. A block of wood has a mass of 180 grams. It is 10.0cm long, 6.0cm wide, and 4.0cm thick. What is its volume and density?
6. A 500 gram piece of metal has a volume of $2.75cm^3$. What is its density?
7. Find the volume of 20.0g of benzene.
8. Find the mass of ether which can be put into a beaker holding 130mL.
9. Find the volume of 10g of gasoline.
10. A cube measures 3.0cm on each side and has a mass of 25g. What is the density of the cube?
11. Will the cube in #10 float in water? Will it float in benzene?
12. An irregularly shaped stone was lowered into a graduated cylinder holding a volume of water equal to 20.0mL. The height of the water rose to 30.2mL. If the mass of the stone was 25.0g, what was its density?
13. A solid object listed below has a volume of $10.0cm^3$. It has a mass of 86g. What is its density? What material is the object?

$d = m/V$ $m = d \cdot V$

$V = m/d$ $1mL = 1cm^3$

Common Densities:	
Benzene	0.88g/mL
Gasoline	0.7g/mL
Ether	0.71g/mL
Brass	$8.6g/cm^3$
Copper	$8.9g/cm^3$