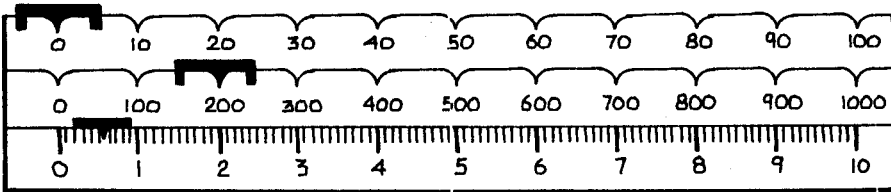
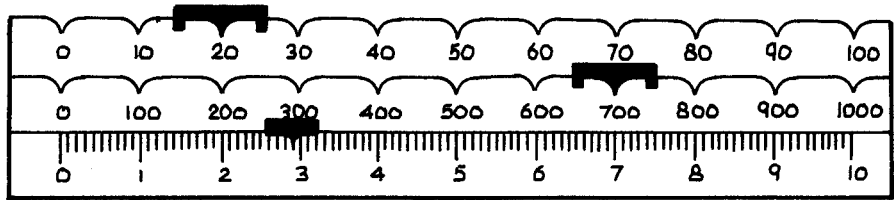


USING THE BALANCE

Name _____

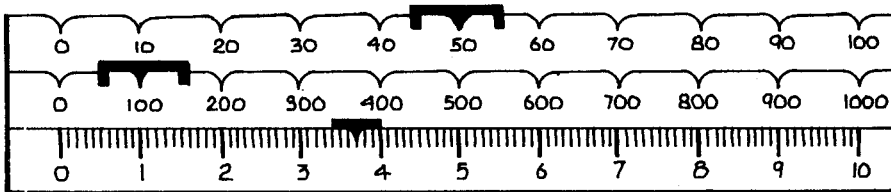
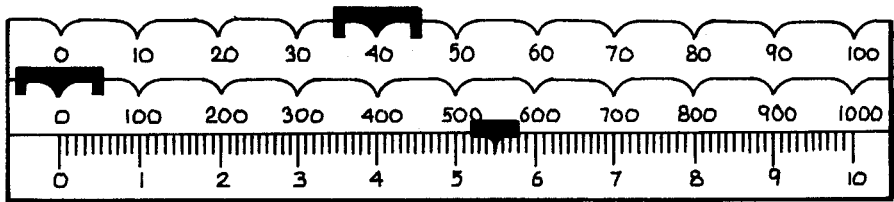
The following balance measure mass in grams. What masses are shown on each of the following balances?

Answer: _____



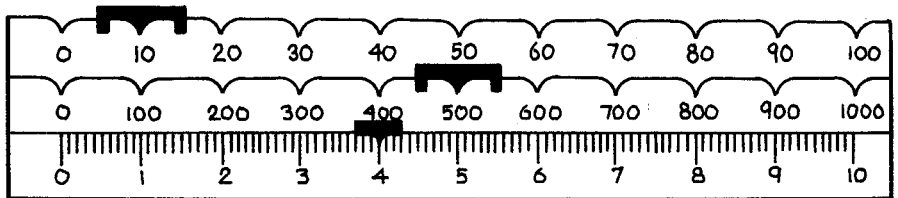
Answer: _____

Answer: _____



Answer: _____

Answer: _____



LABORATORY EQUIPMENT

Name _____

Match the following names of lab instruments and equipment with the correct picture.

a. beaker

c. balance

e. test tube

g. funnel

i. tongs

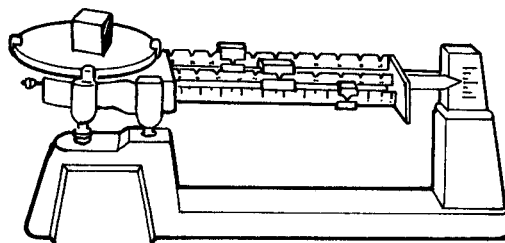
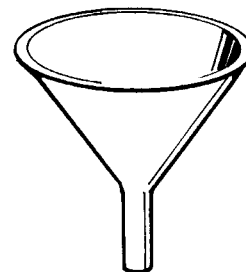
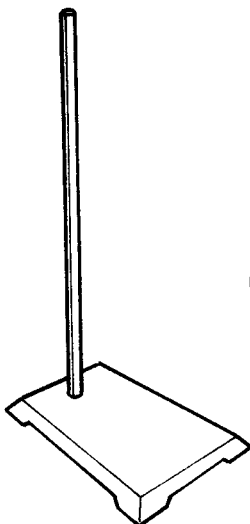
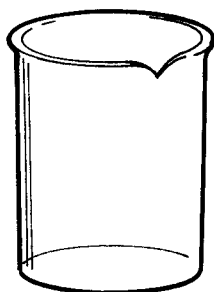
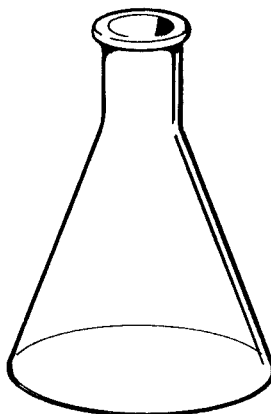
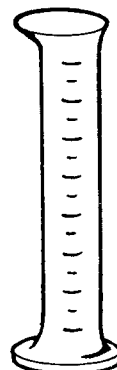
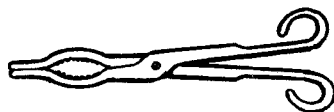
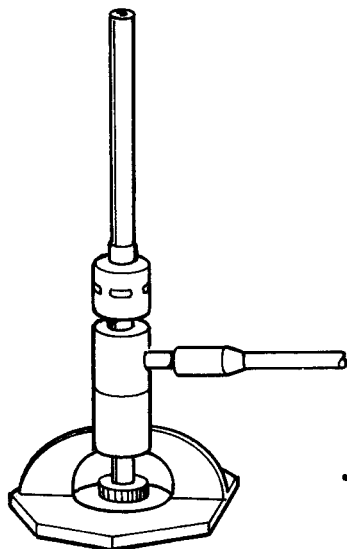
b. graduated
cylinder

d. Bunsen
burner

f. test tube
clamp

h. Erlenmeyer
flask

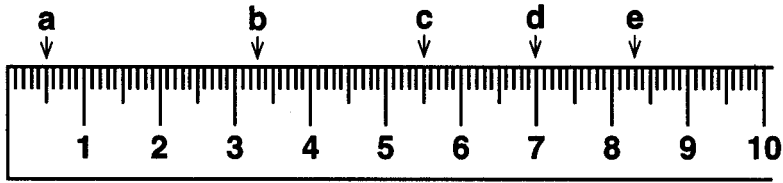
j. ring
stand



MEASURING LENGTH

Name _____

What lengths are marked on the following centimeter ruler?



cm

mm

- | | | |
|----|-------|-------|
| a) | _____ | _____ |
| b) | _____ | _____ |
| c) | _____ | _____ |
| d) | _____ | _____ |
| e) | _____ | _____ |

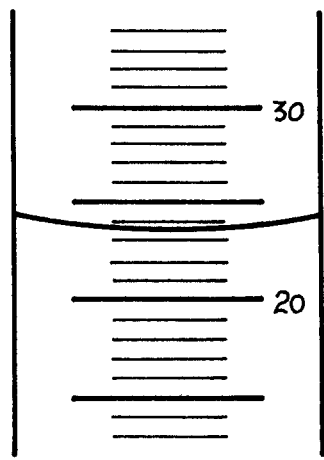
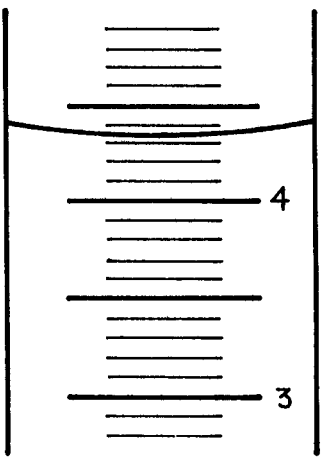
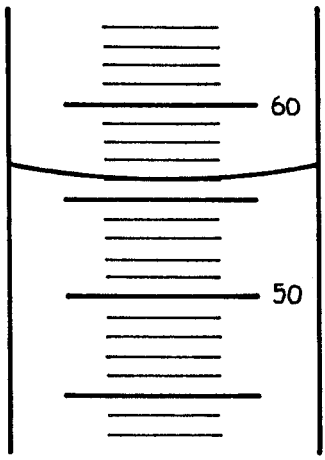
Measure the following lines with a centimeter ruler.

- | | | |
|----|-------|-------|
| f) | _____ | _____ |
| g) | _____ | _____ |
| h) | _____ | _____ |
| i) | _____ | _____ |
| j) | _____ | _____ |
| k) | _____ | _____ |
| l) | _____ | _____ |

MEASURING LIQUIDS

Name _____

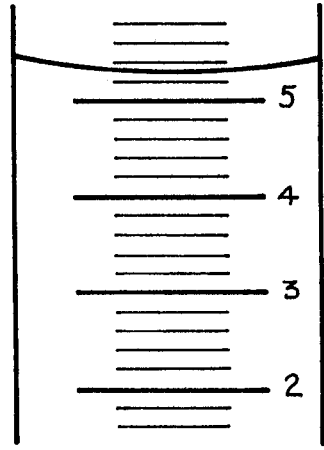
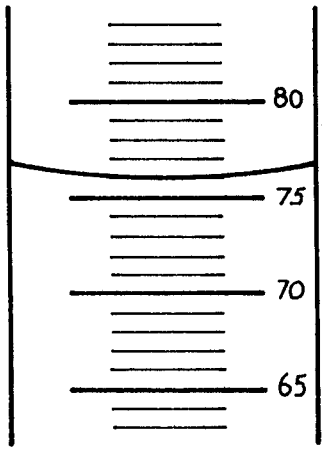
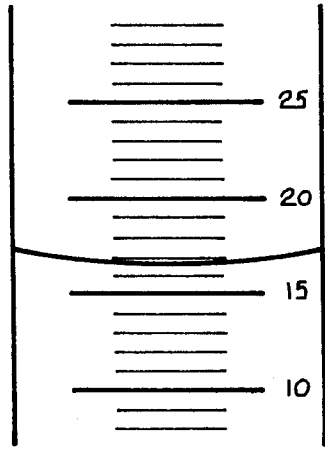
What volume is indicated on each of these graduated cylinders? The unit of volume of is mL.



a) _____

b) _____

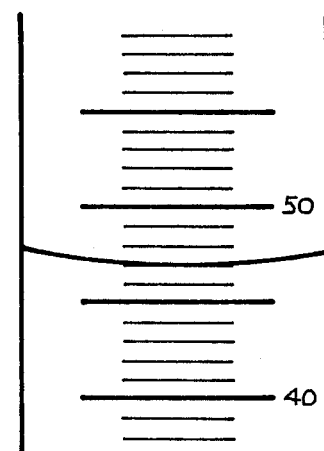
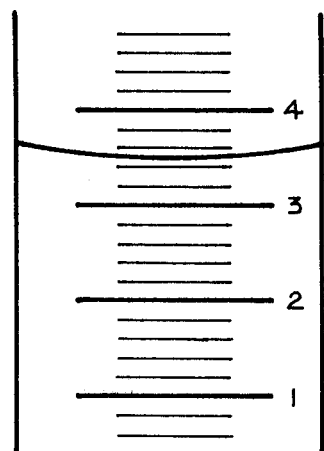
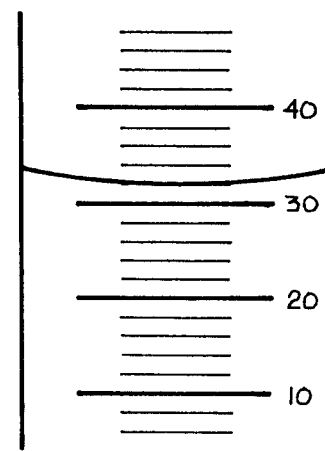
c) _____



d) _____

e) _____

f) _____



g) _____

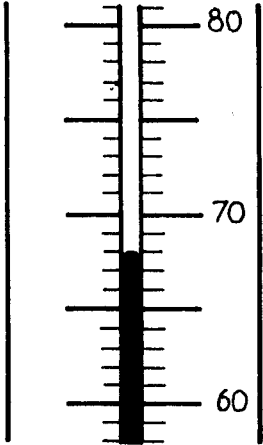
h) _____

i) _____

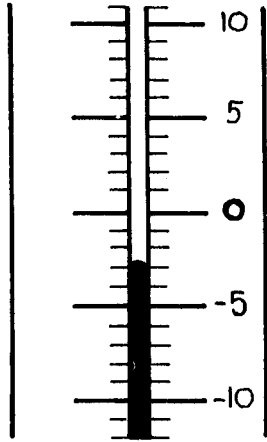
READING THERMOMETERS

Name _____

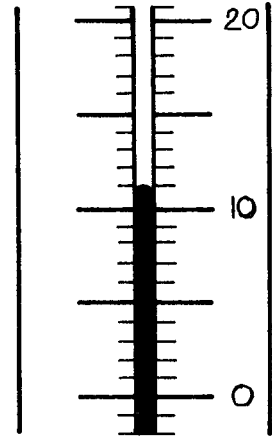
What temperature is indicated on each of these thermometers?



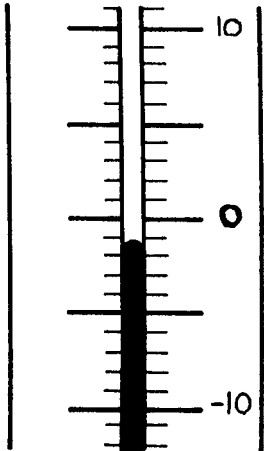
a) _____



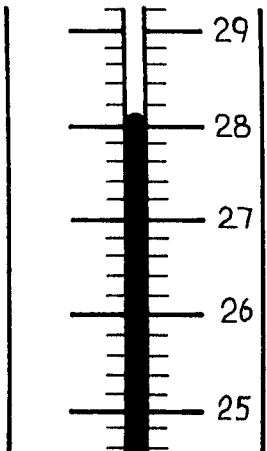
b) _____



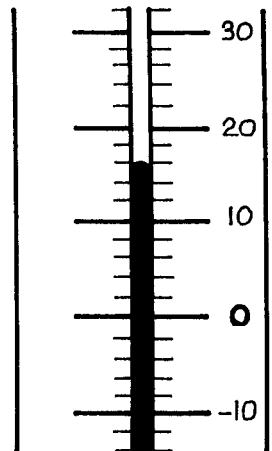
c) _____



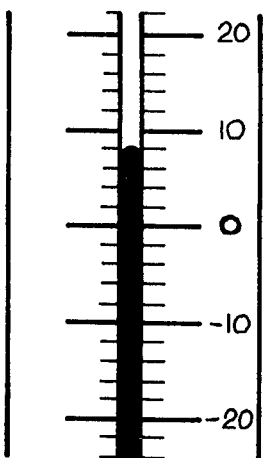
d) _____



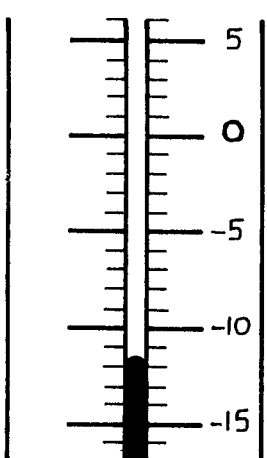
e) _____



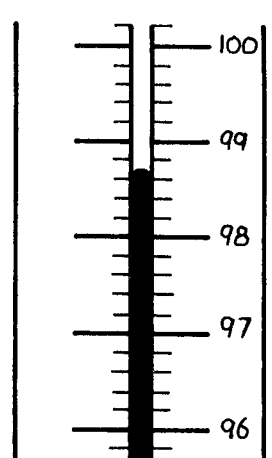
f) _____



g) _____



h) _____



i) _____

METRICS AND MEASUREMENT

Name _____

Scientists use the metric system of measurement, based on the number 10. It is important to be able to convert from one unit to another.

kilo	hecto	deca	Basic Unit gram (g) liter (L) meter (m)	deci	centi	milli
(k)	(h)	(da)		(d)	(c)	(m)
1000	100	10		.1	.01	.001
10^3	10^2	10^1		10^{-1}	10^{-2}	10^{-3}

Using the above chart, we can determine how many places to move the decimal point and in what direction by counting the places from one unit to the other.

Example: Convert 5 mL to L.

Answer: To go from milli (m) to the basic unit, liters, count on the above chart three places to the left. Move the decimal point three places to the left and 5 mL becomes 0.005 L.

Convert the following.

1. 35 mL = _____ dL

6. 4,500 mg = _____ g

2. 950 g = _____ kg

7. 25 cm = _____ mm

3. 275 mm = _____ cm

8. 0.005 kg = _____ dag

4. 1,000 L = _____ kL

9. 0.075 m = _____ cm

5. 1,000 mL = _____ L

10. 15 g = _____ mg

USING CORRECT UNITS

Name _____

For each of the following commonly used measurements, indicate its symbol. Use the symbols to complete the following.

_____ milliliter	_____ milligram	_____ liter	_____ centimeter
_____ kilogram	_____ millimeter	_____ kilometer	_____ gram
_____ meter	_____ millisecond	_____ microgram	_____ nanometer

1. Colas may be purchased in two or three _____ bottles.
2. The mass of bowling ball is 7.25 _____ .
3. The length of the common housefly is about 1 _____ .
4. The mass of a paper clip is about 1 _____ .
5. One teaspoon of cough syrup has a volume of 5 _____ .
6. The speed limit on the highway is usually 106.6 _____ /h or 29 _____ /s.
7. The length of the small intestine in man is about 6.25 _____ .
8. Viruses such as AIDS, polio and flu range in length from 17 to 1000 _____ .
9. Adults require 1,000 _____ of calcium to meet the U.S. RDA.
10. In a vacuum, light can travel 300 km in 1 _____ .
11. The mass of a proton is 1.67×10^{-18} _____ .
12. Blue light has a wavelength of about 500 _____ .
13. One mole of oxygen gas at STP occupies 22.4 _____ .
14. Myoglobin, a protein that stores oxygen, has a mass of 2.98×10^{-14} _____ .
15. Buttery popcorn contained in a large 1 _____ bowl has a mass of about 50 _____ of fat and about 650 calories.
16. The dying comet fragments that continued to batter Jupiter travel at speeds of about 58,117 _____ / _____ or 130,000 miles per hour.
17. The human heart has a mass of about 1.05 _____ .
18. Stand with your arms raised out to your side. The distance from your nose to your outstretched middle finger is about 1 _____ .
19. The body mass of a flea is about 0.5 _____ and it can jump about 20 _____ high.
20. On a statistical basis, smoking a single cigarette lowers your life expectancy by 642,000 _____ or 10.7 minutes.