

SCIENCE 8 – MASS:

Name: _____

Measuring mass on a centigram balance:

(FOUR BEAM BALANCE)

Care of the balance:

Carry with both hands

Be careful! The tray is not attached.

Never put chemicals (liquids or even powders) directly onto the tray.

Make sure the tray and the balance have matching numbers.

To begin weighing:

1. "Zero" your balance.

With nothing on the tray, move all of the number markers to zero.

The arrow should be centered on the balance arm. If it is not, ask your teacher to calibrate your balance

2. Put the object you wish to weigh on the tray.

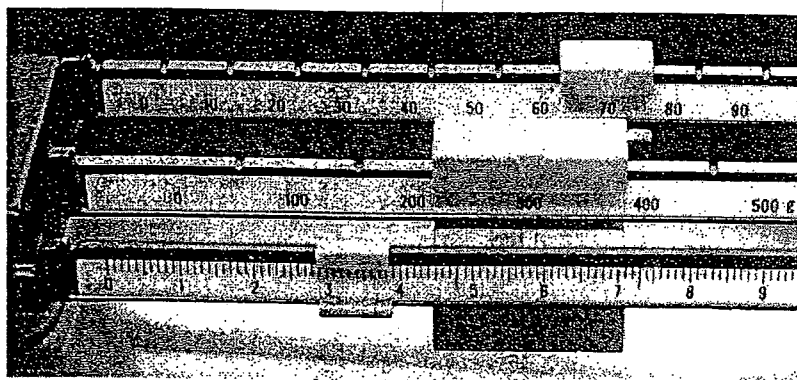
All liquids and powders should go into a beaker before they're weighed.

3. Start with the largest marker. Move it to the right, one notch at a time, until the balance arm dips below the centre line. When this happens, move the marker back one notch and leave it. (Marker must be exactly on a number, never in between!)

4. Repeat the process with the other markers, moving from largest to smallest.

The final marker should be moved until the balance arm is perfectly centered.

5. Read the measurements by adding the numbers each marker points to.



E.x. The scale above reads: _____

**Note: Leaning on & bumping against the table can affect your results.*

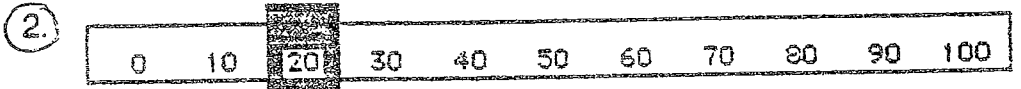
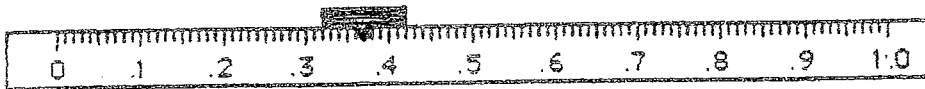
Science 8

Measuring Mass Practice Worksheet

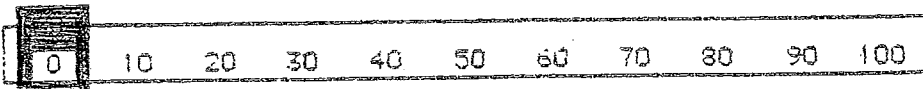
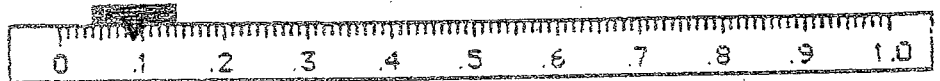
For the readings below give the correct answer on a separate piece of paper (include the units!)



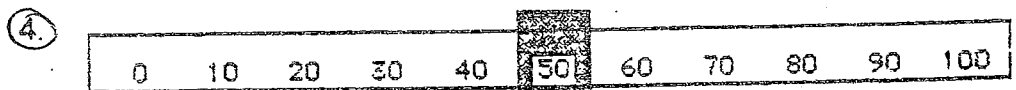
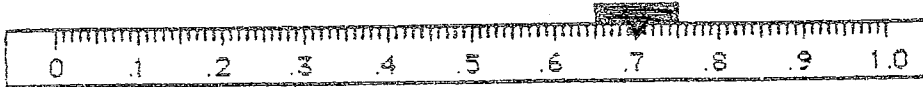
m = _____



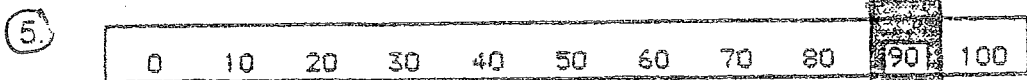
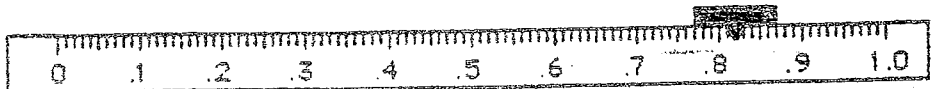
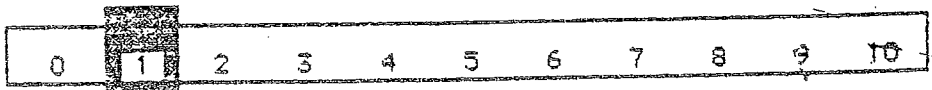
m = _____



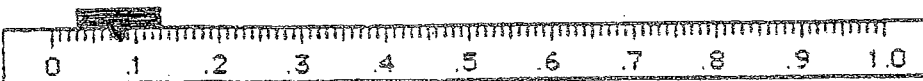
m = _____



m = _____



m = _____



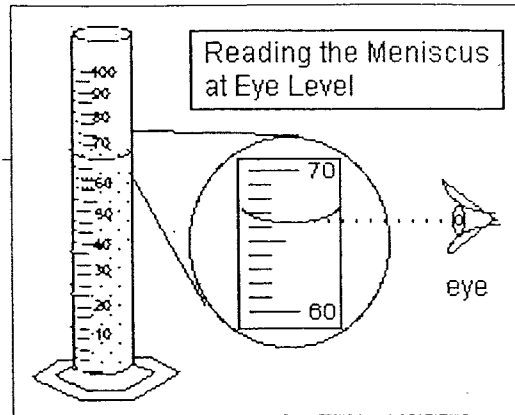
SCIENCE 8 –VOLUME:

Name: _____

To measure volume, we use a **graduated cylinder**.

Pour the liquid that you're trying to measure into the cylinder. The liquid will settle into the bottom of the tube, but will cling to the walls of the glass as well. This creates a dip in the water surface, called a **meniscus**.

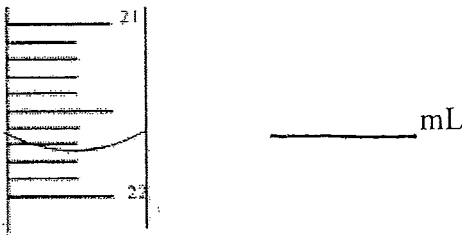
When reading volume, it is very important that you look at the cylinder at eye level, not from above or below. To make sure you're looking straight at it, check to see that the white lines in front & in back are lined up. Now, read the marking that lines up with **the bottom of the meniscus**. (see diagram)



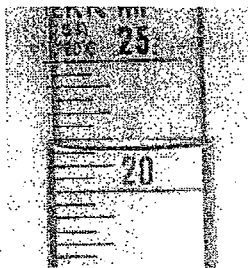
How many decimal places should you report?

Read down to the smallest divisions on the scale, then estimate the last digit in the number.

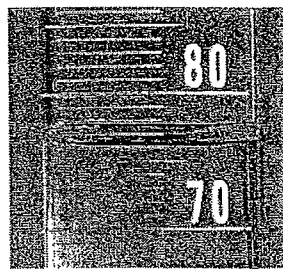
E.x. What volume of liquid is shown?



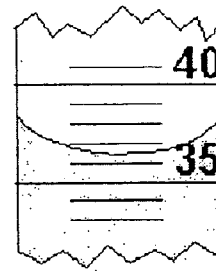
PRACTICE:



V = _____ mL



V = _____ mL



V = _____ mL

MEASURING THE VOLUME OF SOLIDS:

We measure the volume of solids **by difference**. We use the **displacement of water** to do this.

First, put some water into the cylinder. Measure the volume.

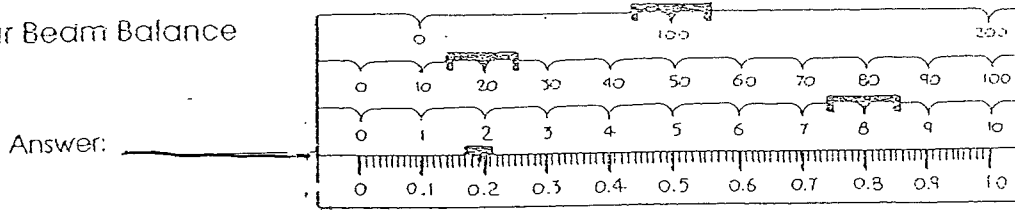
Then, put the solid into the water. The water level will go up. Measure the new volume.

The *change* in volume represents the volume occupied by the solid object.

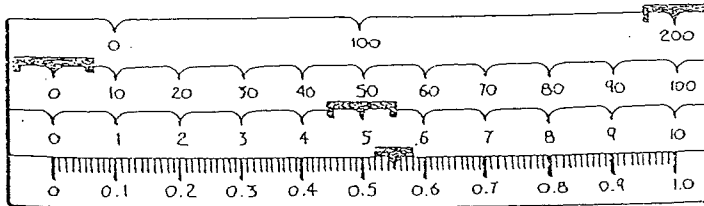
The Four Beam Balance

What masses are shown on each of the following balances?

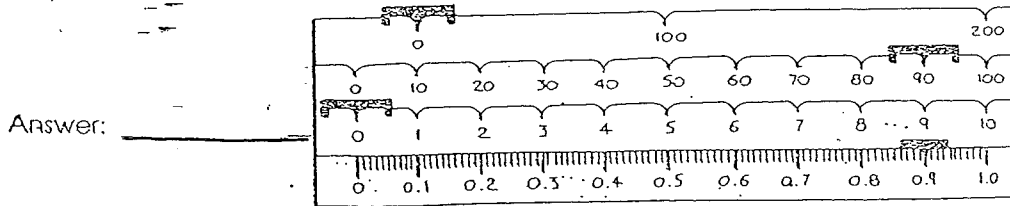
Four Beam Balance



Answer: _____



Answer: _____

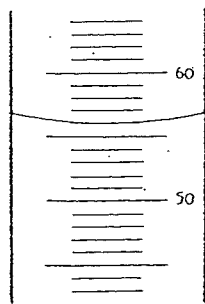


Answer: _____

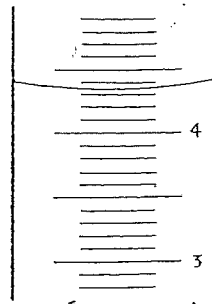
Name:

The Graduated Cylinder

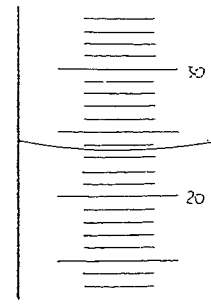
What volume is indicated on each of the graduated cylinders below? The unit of volume is mL.



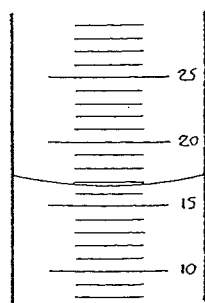
a)



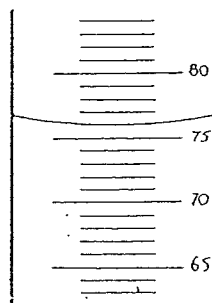
b)



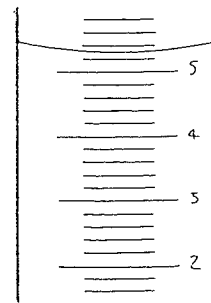
c)



d)



e)



f)