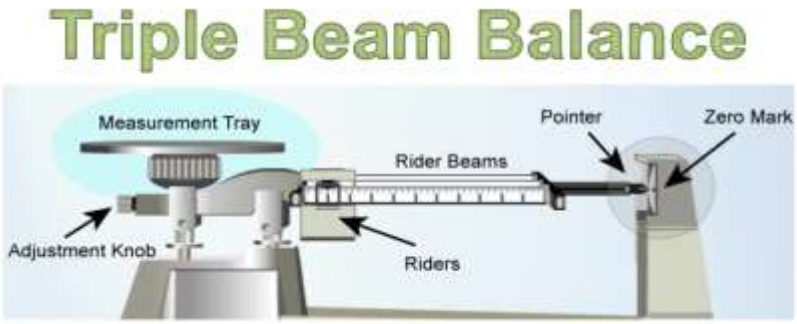
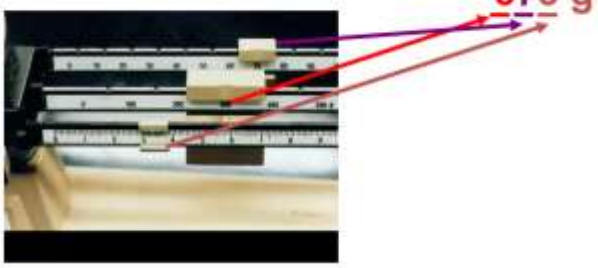
What is a measurement?

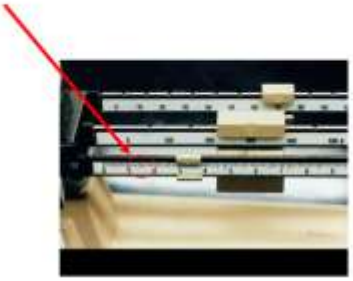
What is uncertainty in measurements?



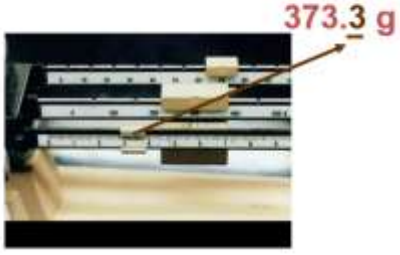
1. Move all three sliders so that they read 'zero'.
Make sure that there is nothing on the pan and that it is clean.
Check to see if the balance reads zero.
2. Your balance isn't reading zero so you need to turn the thumbscrew to adjust the balance until it reads zero
Your balance is ready to measure. Place object to be weighed on the pan. Make sure that no part of the object is supported by the table.
3. Start with the largest slider. Move the slider until balance tips, move the slider back to the previous position, move to the next slider.
4. Continue until the final slider until the balance reads zero.
5. Read each of the sliders and add their weights together.



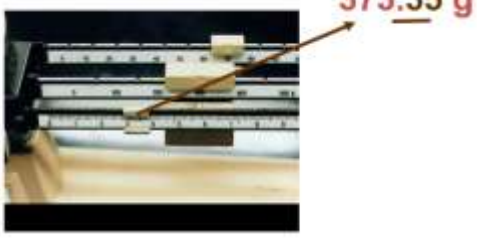
When you read the last slider, notice that the smaller lines represent tenths.



This measurement is past the third line following the 3 on small slider. This indicates a mass of:



Uncertainty in measurements states we can estimate one past the lowest measurement. The number is halfway between 3.3 and 3.4, we record 3.35



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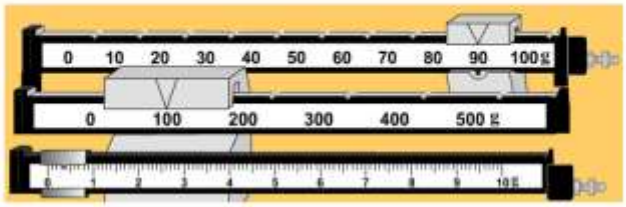
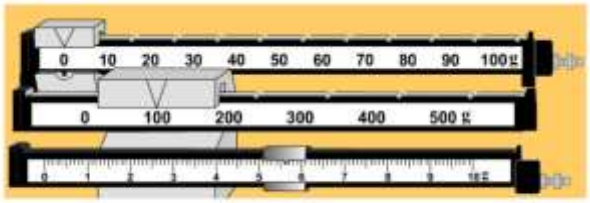
Triple Beam Balance Practice

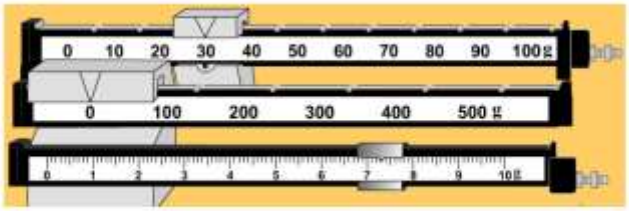
Record the mass show on each balance. Remember to include both the value on the beams and the unit of measurement.



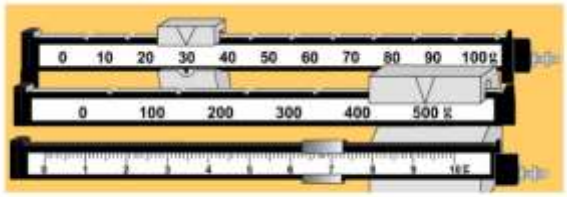
1. _____



3. _____



2. _____

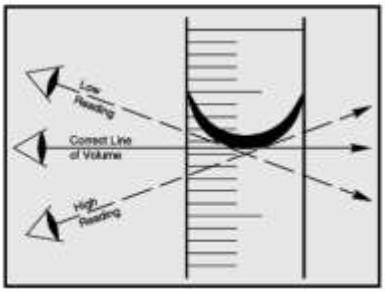


4. _____

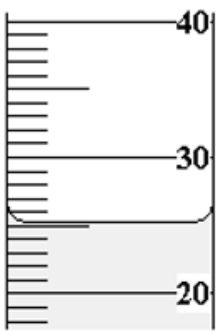
Reading the Graduated Cylinder

1. Read at eye level

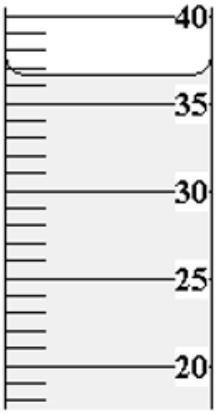
2. Read to the bottom of the MENISCUS



2) Determine the volume of the liquids in the following cylinders:

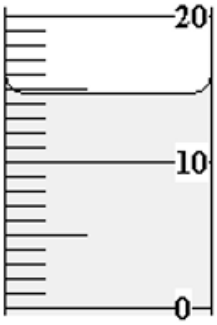


a) _____



b) _____

c) _____



d) _____

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Purpose: Introduction of scientific tools of measurement. **Practicing the rule of measured numbers, precision**

Mass Station: Answer questions before you start

1. **What is mass?**

2. **What is the SI unit for mass?**

3. **What is the difference between mass and weight?**

Mass station: Triple beam balance

Object	Mass in g (use appropriate number of digits)	Convert to milligrams	Convert to kilogram
Object 1			
Object 2			

Length Station: Answer questions before you start

1. **What is Length?**

2. **What is the SI unit for Length?**

Length station: Meter Stick

Object	length in meters use appropriate number of digits)	Convert to millimeters	Convert to kilometers
Object 1			
Object 2			

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Volume Station: Answer questions before you start

1. **What is Volume?**

2. **What is the SI unit for Volume?**

Volume station: graduated cylinder

Object	Volume in ml (use appropriate number of digits)	Convert to Liters	Convert to kiloliters
Object 1			
Object 2			

Find an object (or objects) with a mass or length range. What is it? What is the mass/length (use correct number of digits)?

Mass between 0 and 100: Object _____Mass _____ convert to Kg_____

Mass between 100 and 200: Object _____ Mass _____ convert to mg_____

Mass between 300 and 400: Object_____ Mass_____ convert to Kg_____

Length between 0 and 30 cm: Object _____ length _____ convert to Meter _____

Length between 30 and 60 cm: Object _____length _____ convert to mm_____

Length between 60 and 100 cm: Object _____ length _____ convert to Km_____