

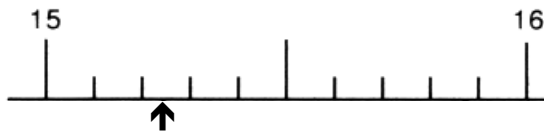
CHEMISTRY 11 – EXPERIMENTAL UNCERTAINTY OF APPARATUS WORKSHEET

(1) Record the values for the experimental uncertainty encountered in using the following apparatus:

Apparatus	Difference between numbered divisions	# of unnumbered subdivisions between numbered divisions	Smallest unnumbered divisions	Uncertainty of measurement
10 mL graduated cylinder	1 mL	5	0.2 mL	± 0.02 mL
25 mL graduated cylinder	2 mL	10	0.2 mL	± 0.02 mL
50 mL graduated cylinder	5 mL	5	1 mL	± 0.1 mL
100 mL graduated cylinder	10 mL	10	1 mL	± 0.1 mL
50 mL beaker	10 mL	1	10 mL	± 1 mL
100 mL beaker	20 mL	2	10 mL	± 1 mL
250 mL beaker	50 mL	2	25 mL	± 2.5 mL
400 mL beaker	50 mL	2	25 mL	± 2.5 mL
600 mL beaker	100 mL	2	50 mL	± 5 mL
1000 mL beaker	100 mL	2	50 mL	± 5 mL
125 mL erlenmeyer flask	25 mL	1	25 mL	± 2.5 mL
250 mL erlenmeyer flask	50 mL	2	25 mL	± 2.5 mL
Gas collecting tube	1 mL	10	0.1 mL	± 0.01 mL
100 mL buret	4 mL	20	0.2 mL	± 0.02 mL
10 mL pipet	1 mL	10	0.1 mL	± 0.01 mL

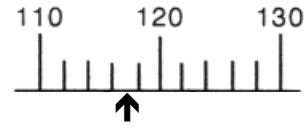
(2) Determine the measurement & uncertainty for each of the following, then highlight the certain digits in your measurement:

(a)



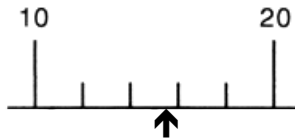
$$15.24 \pm 0.01$$

(f)



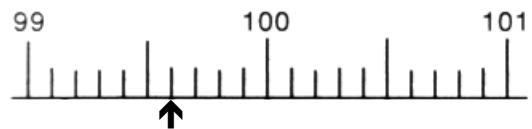
$$117.2 \pm 0.2$$

(b)



$$15.7 \pm 0.2$$

(g)



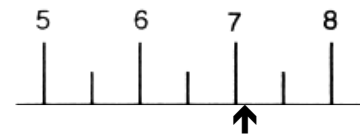
$$99.60 \pm 0.01$$

(c)



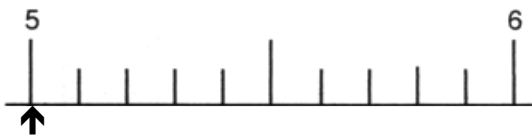
$$0.417 \pm 0.001$$

(h)



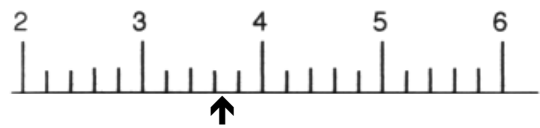
$$7.10 \pm 0.05$$

(d)



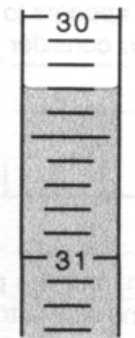
$$5.00 \pm 0.01$$

(i)



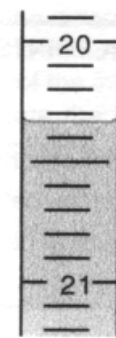
$$3.63 \pm 0.02$$

(e)



$$30.30 \pm 0.01$$

(j)



$$20.33 \pm 0.01$$