Knowledge

1. Add the mass numbers of all the atoms in the compound
2. 16 53.5
3. The atomic or formula mass in grams
4. 6.02×10^{23}
5. The reactant that is in the shortest supply – ie gets used up first
6. It stays the same/is conserved
7. Solid, liquid, gas, aqueous solution
8. Mass = Mr x moles
9. 1000
10. Concentration = mass / volume

Application

1. (40/111 x 100) – 36%
2. 23+19 = 42 42x5 = 210g
3. 1 mole = 2g. Moles = mass/Mr 20/2 = <u>10moles</u>
4. $2K + I_2 \rightarrow 2KI$

78 254 332

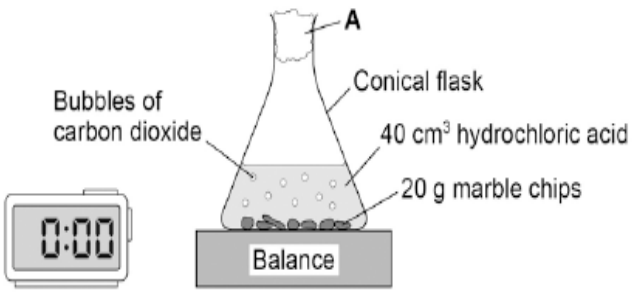
÷332 x 50 50 ÷332 x 50

<u>11.75g</u>

Step 1: write the equation	$HBr + H_2SO_4 \rightarrow H_2O + SO_2 + Br_2$				
Step 2: Write the experimental masses under the equation	1.62	0.98	0.36	0.64	1.60
Step 3: Write the mass of <u>one mole</u> for each chemical under the equation	81	98	18	64	160
Step 4: Calculate the number of moles of each chemical in the experiment (experimental mass ÷ formula mass)	0.02	0.01	0.02	0.01	0.01
Step 5: Convert into simplest ratio Cancel down fully	2	1	2	1	1
Step 6: Write the balanced equation	$2HBr + H_2SO_4 \rightarrow 2H_2O + SO_2 + Br_2$				

6.

Figure 1



a) $CaCO_{3\ (s)} + 2\ HCl_{(aq)} \rightarrow CaCl_{2\ (aq)} + H_2O_{(l)} + CO_{2\ (g)}$

b) In equation

c) Stops acid spraying out of the flask (NOT the gases)

d) Uncertainty = range /2 range – 8.6-8.2 = 0.4

0.4/2 = 0.2

So uncertainty = 8.4g +/- 0.2g

7. C= M/V

Remember volume needs to be in dm^3

So 200/1000 = 0.2

C= 35/0.2 = 165g/dm^3