Date:	Block: Name:
	Chemistry 11 - MOLE RATIOS (using the three step method)
	nesium metal reacts with hydrochloric acid to produce magnesium chloride and ogen gas. The chemical equation is given as the following:
	$Mg(s) + 2HCl(aq) \rightarrow MgCl_2 + H_2(g)$
If 4 n	noles of HCl is used, how many moles of MgCl <sub>2</sub> will be formed in the reaction?
Step	(1): What is the mole ratio for HCl to MgCl <sub>2</sub> ?
	2 mol HCl: 1 mol MgCl <sub>2</sub>
Step	(2): Write two conversion factors for this mole ratio.
	$\begin{array}{c cccc} \underline{2 \text{ mol HCl}} & \text{or} & \underline{1 \text{ mol MgCl}_2} \\ 1 \text{ mol MgCl}_2 & & 2 \text{ mol HCl} \end{array}$
Step (3): Calculate the number of moles of MgCl <sub>2</sub> formed.	
	What you want = What you have X Conversion factor
	Moles $MgCl_2 = 4 \text{ mol HCl } X  \frac{1 \text{ mol } MgCl_2}{2 \text{ mol HCl}}$
	$= 2 \bmod MgCl_2$
	mol MgCl <sub>2</sub> mol MgCl <sub>2</sub>
Now	try these example questions on a separate sheet of paper using the 3-step method!
1.	$3CaSi_2 + 2SbCl_3 \rightarrow 6Si + 2Sb + 3CaCl_2$
a)	If 0.65 moles of CaSi <sub>2</sub> is used, how many moles of Sb will be formed in the reaction?
	Answer: 0.43 mol Sh
b)	If 1.47 moles of Si is formed in the reaction, how many moles of SbCl <sub>3</sub> was used at the start of the reaction?
	Answer: 0.49 mol SbCl
w	a Chemistry 11 experiment, John mixes 0.010 moles of calcium chloride together ith silver nitrate in a beaker. This results in the formation of silver chloride and alcium nitrate. How many moles of silver chloride are formed in the reaction?

Answer: 0.020 mol AgCl