

Name _____

Single replacement reactions

In a single replacement reaction, an element reacts with a compound to form a different element and a different compound. In this type of reaction, the reactant element will break up the reactant compound, 'kick out' the same-charged ion, and take its place. The replaced ion will now become the 'new' product element, and the new pair will become the 'new' product compound.



However, there is one condition that needs to be met before a single replacement reaction can occur.

**** For a single replacement reaction to occur, the starting element must be more 'active' than the ion it is going to replace in the compound.****

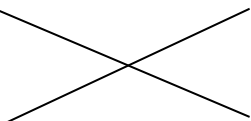
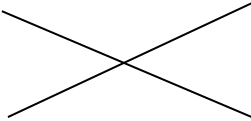
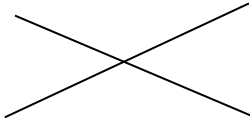
QUESTION: Which of the following single replacement reactions will occur?

- a) $\text{Mg(s)} + \text{HCl(aq)} \rightarrow$
- b) $\text{Mg(s)} + \text{Cu(NO}_3)_2\text{(aq)} \rightarrow$
- c) $\text{Mg(s)} + \text{Fe(NO}_3)_2\text{(aq)} \rightarrow$
- d) $\text{Fe(s)} + \text{HCl(aq)} \rightarrow$
- e) $\text{Fe(s)} + \text{Cu(NO}_3)_2\text{(aq)} \rightarrow$
- f) $\text{Fe(s)} + \text{Mg(NO}_3)_2\text{(aq)} \rightarrow$
- g) $\text{Cu(s)} + \text{HCl(aq)} \rightarrow$
- h) $\text{Cu(s)} + \text{Mg(NO}_3)_2\text{(aq)} \rightarrow$
- i) $\text{Cu(s)} + \text{Fe(NO}_3)_2\text{(aq)} \rightarrow$

CLAIM: _____

(conclusion sentence answering the question)

EVIDENCE:

Metals	Compounds			
	HCl	$\text{Cu(NO}_3)_2$	$\text{Mg(NO}_3)_2$	$\text{Fe(NO}_3)_2$
Cu				
Mg				
Fe				

REASONING: (justification for *how you know* that the reactions occurred, using the evidence obtained and scientific principles)

For the single replacement reactions that did occur, finish the reactions and balance. For the ones that did not occur, leave them unfinished.

