

Assignment 4K – Writing Single Replacement Reactions w/Polyatomic Ions 20 Points

For the following ions, determine the charges for each ion/element

<u>Na</u> <u>BrO₃</u> no()	Al(BrO ₃) ₃		CuSO ₄		V(OH) ₃	
Na BrO ₃ no()	Al (3A) +3	BrO ₃ (chart) -1	Cu (calc) +2	SO ₄ (chart) -2	V (calc) +3	OH (chart) -1
<u>Ca</u> <u>(BrO₃)₂</u> inside()	Na ₃ PO ₄		W(CrO ₄) ₃		Fe ₂ (C ₂ O ₄) ₃	
Ca (BrO ₃) ₂ inside()	Na (1A) +1	PO ₄ (chart) -3	W (calc) +6	CrO ₄ (chart) -2	Fe (calc) +2	C ₂ O ₄ (chart) -2

For the following reactions, write the products of each reaction following the template provided.

Show work for ionic compound BrO₄¹⁻: perbromate ion

Reaction	Fe ²⁺ + Ca(BrO ₄) ₂ → _____ + _____	Reaction	Mg + CuCO ₃ → _____ + _____								
A + BC → AC + B		A + BC → AC + B									
A	Fe	BC	Ca(BrO ₄) ₂	B	Ca	A	Mg	BC	CuCO ₃	B	

Formula	A	C	Formula	A	C
Ion Charge	+2	-1	Ion Charge		
Cross Method	Fe (BrO ₄) ₂		Cross Method		
AC	Fe(BrO ₄) ₂		AC		

Reaction	Nb ²⁺ + Ba(HCO ₃) ₂ → _____ + _____	Reaction	Al + H ₂ SO ₄ → _____ + _____								
A + BC → AC + B		A + BC → AC + B									
A	Nb	BC	Ba(HCO ₃) ₂	B	H ₂	A	Al	BC	H ₂ SO ₄	B	

Formula	A	C	Formula	A	C
Ion Charge	+2	-1	Ion Charge		
Cross Method	Nb (HCO ₃) ₂		Cross Method		
AC	Nb(HCO ₃) ₂		AC		

Diatomc Element
 H₂, N₂, O₂, F₂, Cl₂, Br₂, I₂

Reaction	$Ti^{4+} + MgCrO_4 \rightarrow \underline{\quad} + \underline{\quad}$	Reaction	$Tc^{3+} + RbNO_3 \rightarrow \underline{\quad} + \underline{\quad}$
$A + BC \rightarrow AC + B$		$A + BC \rightarrow AC + B$	
A	Ti	BC	MgCrO ₄
		B	Mg

Formula	A	C
Ion Charge	+4	-2
Cross Method	Ti	(CrO₄)
AC	Ti(CrO ₄) ₂	

Formula	A	C
Ion Charge		
Cross Method		
AC		

(4:2 Ratio)
 $Ti_2(CrO_4)_4$
 $\frac{2}{2}$ $\frac{4}{2}$
 Reduce!
 $Ti(CrO_4)_2$

Reaction	$Sn^{4+} + Al_2(HPO_4)_3 \rightarrow \underline{\quad} + \underline{\quad}$	Reaction	$K + PdC_2O_4 \rightarrow \underline{\quad} + \underline{\quad}$
$A + BC \rightarrow AC + B$		$A + BC \rightarrow AC + B$	
A		BC	
		B	

Formula	A	C
Ion Charge		
Cross Method		
AC		

Formula	A	C
Ion Charge		
Cross Method		
AC		

~~Ag₂Cr₂O₇~~
~~Ag₂Cr₂O₇~~
 no "2" no ()

Reaction	$Sr + Ag_2Cr_2O_7 \rightarrow \underline{\quad} + \underline{\quad}$	Reaction	$H_2 + Cr(IO_3)_2 \rightarrow \underline{\quad} + \underline{\quad}$
$A + BC \rightarrow AC + B$		$A + BC \rightarrow AC + B$	
A	Sr	BC	Ag ₂ Cr ₂ O ₇
		B	Ag

Formula	A	C
Ion Charge	+2	-2
Cross Method	Sr	(Cr₂O₇)
AC	SrCr ₂ O ₇	

Formula	A	C
Ion Charge		
Cross Method		
AC		

2:2 ratio
 $Sr_2(Cr_2O_7)_2$
 $\frac{2}{2}$ $\frac{2}{2}$
 Reduce!
~~Sr₂(Cr₂O₇)₂~~
 $SrCr_2O_7$