

Name: \_\_\_\_\_

date: \_\_\_\_\_

period: \_\_\_\_\_

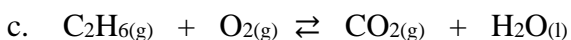
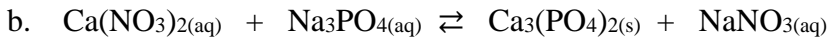
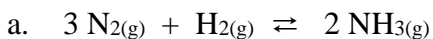
equilibrium test

35 points

ngss chemistry

For problems, involving calculations, show your work in an organized manner, show formula / equation used, include the appropriate units and conversion factor(s) in your work / answer.

1. Write the algebraic expression of the equilibrium constant,  $K_c$  and  $K_p$ , for the following chemical reactions; if it does not exist, then clearly state it. [10 points]



2. Based on the below table, what is the numeric value of the equilibrium constant,  $K_c$ , for the reaction:  $3 \text{N}_{2(g)} + \text{H}_{2(g)} \rightleftharpoons 2 \text{NH}_{3(g)}$  [10 points]

	$\text{N}_2$ (M)	$\text{H}_2$ (M)	$\text{NH}_3$ (M)
[initial]	5.0	3.0	2.0
[change]			
[equilibrium]		1.5	

3. In the reaction:  $\text{Br}_{2(g)} + \text{H}_{2(g)} \rightleftharpoons 2 \text{HBr}_{(g)}$ ;  $K_c = 10$ ; what is the equilibrium concentration of HBr by mixing 3.0 M  $\text{Br}_2$  and 4.0 M  $\text{H}_2$ . [15 points]