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

**September 24, 2012**

**Geometry, Mrs. Sulkes**

**Logic - Introduction to Formal Proofs**

**Examples: Complete the following proofs using the rules.**

1. Given: 

Prove: 

1. Given: 

Prove: P

1. Given: 

Prove: C

1. Given: 

Prove: R

1. Given: 

Prove: S

***For #6 – 10, complete the following proofs using two column: statements and reasons.***

6. Given: 

Prove: 

7. Given: 

Prove: 

8. Given: 

Prove: 

9. Given: 

Prove: 

10. Given: 

Prove: 

***For #11 – 13, translate the argument into symbolic form using the variables given. Be clear as to which statements are the given and which statement you are trying to prove. Then decide whether or not the argument is valid. If it is, complete a two column proof to verify the argument is valid. If not, explain why not.***

11. I can either study mathematics or biology. If I have to take English, then I won’t study biology. I don’t study mathematics. Therefore, I do not have to take English. (Use variables ).

12. Pat is going to work or to dinner with Jan. If Pat is going to work, then it is not sunny. It is sunny. Therefore, Pat is going to dinner with Jan. (Use variables )

13. If the salaries go up, then more people apply. Either more people apply or the salaries go up. Therefore, the salaries go up. (Use variables )