

## Symbolic Logic Worksheet 1

Name \_\_\_\_\_

Date \_\_\_\_\_

1. Given    a:  $y < 6$   
              b:  $y > 1$

Let the domain = {1, 2, 3, 4, 5, 6, 7, 8}

- a) For what values of  $y$  is  $a \wedge b$  true? \_\_\_\_\_  
 b) For what values of  $y$  is  $a \vee b$  true? \_\_\_\_\_

2. Given    r: I am an honor student.  
              s: I play football.

Write the statement represented by each of the following:

- a)  $\sim r$  \_\_\_\_\_  
 b)  $r \wedge s$  \_\_\_\_\_  
 c)  $r \wedge \sim s$  \_\_\_\_\_  
 d)  $\sim r \wedge s$  \_\_\_\_\_  
 e)  $r \vee s$  \_\_\_\_\_  
 f)  $r \vee \sim s$  \_\_\_\_\_

3. Create the following truth table for the statements given in problem 2.

r	s	$\sim r$	$\sim s$	$r \wedge s$	$r \wedge \sim s$	$\sim r \wedge s$	$r \vee s$	$r \vee \sim s$
T	T							
T	F							
F	T							
F	F							