Name: _____   CompID: _____

Quiz 01

PROBLEM GROUP 1 *English ↦ Math*

Rewrite each of the following English sentences as an expression over propositions. Include both a mapping from symbols to propositions and the final expression.

1. I'll do well on this quiz if my preparation was good.

2. Superheroes fight for goodness and look good in tights.

3. If you're a performer or on the staff then you can come in early or on-time.

4. If you're a midget or a giant (I've never met a giant), you're unusually sized and clothes-shopping is difficult

PROBLEM GROUP 2 *If Statements*

Write an expression for when the following function returns the given return values. Use the parameters of the function as your propositions. Each function is shown in both Java and Python.

```python
def f(a,b):
    if a and (not b):
        return "one"
    elif (not a) or b:
        return "two"
    else:
        return "three"
```

```java
public static String f(boolean a, boolean b){
    if(a && (!b))
        return "one";
    else if((!a) || b)
        return "two";
    else
        return "three";
}
```

5. f returns "one" when _____

6. f returns "two" when _____

7. f returns "three" when _____

PROBLEM GROUP 3 *Truth Tables*

Fill in the following truth table

8.

A	B	C	$(A \leftrightarrow C)$	$\oplus$	$(B \rightarrow C)$
0	0	0			
0	0	1			
0	1	0			
0	1	1			
1	0	0			
1	0	1			
1	1	0			
1	1	1			