Homework 3

## Question 1

### 1.

Now,

Split into 4 cases.

Case 1:

Case 2:

Case 3:

Case 4:

In all 4 possible combinations of and , the equality holds; this completes the proof.

### 2.

The two are the same!

### 3.

We have …This tells us

### 4.

We have

Now,

### 5.

### 6.

### 7.

### 8.

### 9.

### 10.

### 11.

### 12.