CS 245 — Assignment #8
Spring 2006

Due Date: Tuesday, July 18 at 5pm.

Use `makeCover` to produce a cover page for your assignment and hand in your assignment in the CS 245 assignment box. Assignments are to be done individually.

For each of the following triples (pre-condition, program, post-condition), prove that the triple is satisfied under partial correctness. Use natural deduction or transformational proof techniques to prove any implied conditions.

1. (8 points)

$(\!|x = x_0 \ \wedge \ y = y_0|\!)$
```
x = x + y;
y = x - y;
x = x - y;
```
$(\!|x = y_0 \ \wedge \ y = x_0|\!)$

2. (17 points)

$(\!|\mathbf{true}|\!)$
```
if (x > y)      m = x + 2 * y;
else if (x < y) m = x + 3 * y;
else            m = x + 4 * y;
```
$(\!|(x > y \ \wedge \ m = x + 2y) \ \vee \ (x < y \ \wedge \ m = x + 3y) \ \vee \ (x = y \ \wedge \ m = x + 4y)|\!)$