**Problem 1**

**Proof: Alternate Interior Angles Theorem**

**Proof: Same-Side Interior Angles Theorem**





**Problem 2**

What are the measures of the unknown angles?

**Problem 3**

****In the figure at right,

1. What are the values of x and y?
2. What are the measures of the four angles?

**Problem 4**

1. Which lines are parallel if ∠1 ≅ ∠2? Justify your answer.
2. Which lines are parallel if ∠6 ≅ ∠7? Justify your answer.

**Proof: Converse of the Alternate Interior Angles Theorem**



**Problem 5**

What is the value for *x* for which line *a* | | line *b*?