Review of Chapter 1 and 2 Name: _____

Date: _____ Pd: _____

What are the parts of a proof?

1. Statement of the ***theorem*** and/or a ***diagram*** that illustrates the given information
2. A list of the ***given*** information
3. A list of what you are to ***prove***
4. A series of numbered ***statements*** that lead to what you are trying to prove
5. A series of ***reasons*** that justify each statement

What can be used as reasons in a proof?

1. Given information
2 Definitions
3. Properties
4. Postulates
5. Theorems that have already been proved

Determine whether the following conditional statement is true or false.
Then write the converse and determine whether the converse statement is true or false.
If either statement is false, provide a counterexample.

If $\sqrt{x}=2$, then $x^2=16$. T F

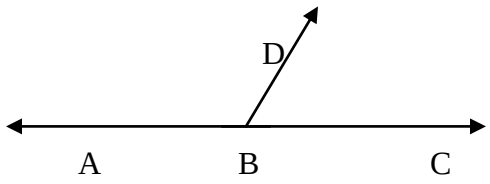
Converse: _____ T F

Can you write a true biconditional statement from the information above?
Explain why you can or cannot. If you can, write it below.

_____

_____

Look at the diagram below.
Write the three statements that can be justified by the ***Angle Addition Postulate.***



1. _____

2. _____

3. _____

<u>The Midpoint Theorem</u>

If M is the midpoint of $\overline{AB}$, then $AM = MB$, $AM = \frac{1}{2}AB$, and $MB = \frac{1}{2}AB$.

Diagram

Given: _____

Prove: _____

Statements	Reasons
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____

The Angle Bisector Theorem

If $\overrightarrow{BX}$ is the bisector of $\angle ABC$, then $m\angle ABX = m\angle XBC$, $m\angle ABX = \frac{1}{2}m\angle ABC$, and $m\angle XBC = \frac{1}{2}m\angle ABC$. **Diagram**

Given: _____

Prove: _____

Statements	Reasons
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____

Vertical Angle Theorem – Vertical angles are congruent. **Diagram**

Given: _____

Prove: _____

Statements	Reasons
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

Right Angles Theorem – All right angles are congruent.

Given: _____

Prove: _____

	Statements	Reasons
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____

Theorem: If the exterior sides of two adjacent acute angles are perpendicular, then the angles are complementary.

Diagram

Given: _____

Prove: _____

	Statements	Reasons
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____

Theorem: If two lines are perpendicular, then they form congruent adjacent angles.

Diagram

Given: _____

Prove: _____

Statements	Reasons
1. _____	_____
2. _____	_____
3. _____	_____

Theorem: If two lines form congruent adjacent angles, then the lines are perpendicular.

Diagram

Given: _____

Prove: _____

Statements	Reasons
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____

Since these two theorems are converses of each other, write a biconditional statement.

_____

The proofs for the Congruent Complements and the Congruent Supplements theorems follow very similar reasoning. Make sure you can prove both.

Congruent Supplements Thrm – If two angles are supplements of the same or congruent angles, then the two angles are congruent.

Given: _____

Prove: _____

	Statements	Reasons
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____

The proofs for the Congruent Complements Converse and the Congruent Supplements Converse follow very similar reasoning. Make sure you can prove both.

Congruent Complements Converse – If two angles are congruent, then they are complementary to the same or congruent angles.

Given: _____

Prove: _____

	Statements	Reasons
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____