Geometry CC – Mr. Valentino   Name: _____
Unit 5 Lesson 2: Introduction to Proofs!   Date: _____ Period: _____

Do Now: Fill in the blank with the correct word that fits the definition

Segment Bisector	Altitude	Supplementary Angles
Angle Bisector	Midpoint	Complementary Angles
Perpendicular Lines	Vertical Angles	Median
	Linear Pair	

1. The _____ is the point on the line segment that divides the segment into two

   congruent segments.

2. A _____ is any line or part of a line that intersects a line segment at its

   midpoint.

3. A _____ is a line segment extending from any vertex of a triangle to the

   midpoint of the opposite side.

4. An _____ is a ray whose endpoint is the vertex of the angle and which divides

   the angle into two congruent angles.

5. _____ are two lines which intersect to form right angles.

6. The _____ is a line segment extending from any vertex of a triangle,

   perpendicular to the opposite side.

7. _____ are two nonadjacent angles formed by two intersecting lines.

8. _____ are two angles whose sum is 90°.

9. _____ are two angles whose sum is 180°.

10. _____ are adjacent supplementary angles.

Why Study Proofs?

You use proofs every day, without knowing it. Geometry is logical and it teaches you how to think and prove

that things are so, step by step by step. Proofs are excellent lessons in reasoning. Without logic and reasoning,

you are dependent on jumping to conclusions or WORSE, having empty opinions!
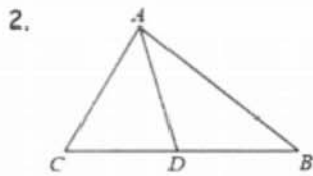

A <u>Geometry Proof</u> is a logical argument that establishes the _____ of a statement.

Two Column Proofs

For each question, draw a conclusion based on the given information (use the vocabulary on the first page to help guide you)
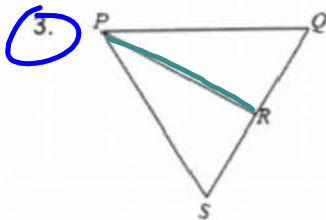
1.
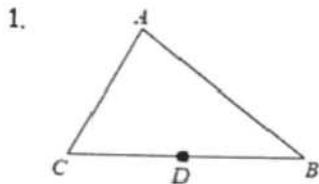
Statements	Reasons
1. D is the midpoint of $\overline{CB}$.	1. Given
2.	2.

2.

Statements	Reasons
1. $\overline{AD}$ bisects $\overline{CB}$.	1. Given
2.	2.

(3.)

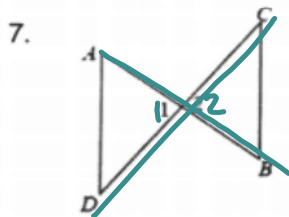| Statements	Reasons
1. $\overline{PR}$ is a median in $\triangle PQS$.	1. Given
2. R is the midpoint of $\overline{SQ}$ ③ $\overline{SR} \cong \overline{QR}$	2. A median connects the vertex to the midpoint of the other side

4.
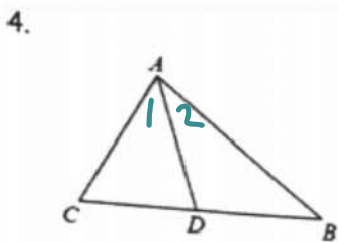
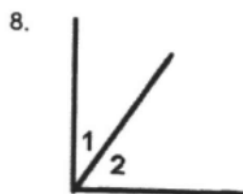| Statements	Reasons
1. $\overline{AD}$ bisects $\angle CAB$.	1. Given
2. $\angle 1 \cong \angle 2$	2. An angle bisector divides an angle into 2 $\cong$ $\angle$'s

5.
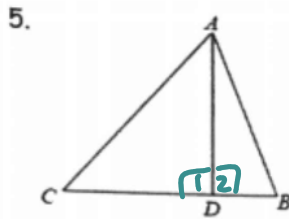
Statements	Reasons
1. $\overline{AD}$ is an altitude in $\triangle ABC$.	1. Given
2. ∠1 and ∠2 are 90° ∠'s	2. An altitude is a line from a vertex that is ⊥ to the opp. side

6.
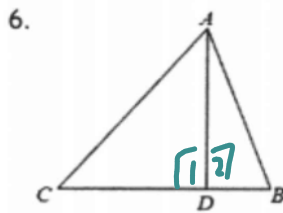
Statements	Reasons
1. $\overline{AD} \perp \overline{CB}$	1. Given
2. ∠1 and ∠2 are right ∠'s	2. ⊥ lines form right ∠'s

7.

Statements	Reasons
$\overline{AB}$ $\overline{CD}$ 1. ~~AB~~ and ~~CD~~ intersect.	1. Given
2. ∠1 ≅ ∠2	2. Vertical ∠'s are ≅

8.

Statements	Reasons
1. ∠1 and ∠2 are complementary.	1. Given
2. ∠1 + ∠2 = 90°	2. Complementary ∠'s have a sum of 90°

9.

Statements	Reasons
1. $\angle 5 \cong \angle 8$	1. Given
2. $\angle 6 \cong \angle 7$	2. Supplements of $\cong$ $\angle$'s are $\cong$

10.
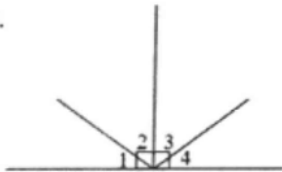
Statements	Reasons
1. $\angle 1 \cong \angle 4$	1. Given
2. $\angle 2 \cong \angle 3$	2. Complements of $\cong$ $\angle$'s are $\cong$