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 midpoint is the point on the line segment that divides the segment into two congruent segments.
2. A segment bisector is any line or part of a line that intersects a line segment at its midpoint.
3. A median is a line segment extending from any vertex of a triangle to the midpoint of the opposite side.
4. An angle bisector is a ray whose endpoint is the vertex of the angle and which divides the angle into two congruent angles.
5. Perpendicular Lines are two lines which intersect to form right angles.
6. The altitude is a line segment extending from any vertex of a triangle, perpendicular to the opposite side.
7. Vertical angles are two nonadjacent angles formed by two intersecting lines.
8. Comp. are two angles whose sum is 90°.
9. Supp. are two angles whose sum is 180°.
10. Linear Pair are adjacent supplementary angles.

Why Study Proofs?

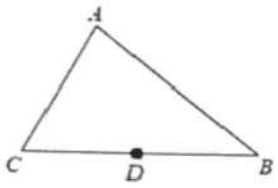
You use proofs every day, without knowing it. Geometry is logical and it teaches you how to think and prove that things are so, step by step by step. Proofs are excellent lessons in reasoning. Without logic and reasoning, you are dependent on jumping to conclusions or WORSE, having empty opinions!

A Geometry Proof is a logical argument that establishes the truth of a statement.

Two Column Proofs

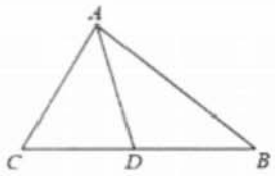
For each question, draw a conclusion based on the given information (use the vocabulary on the first page to help guide you)

1.



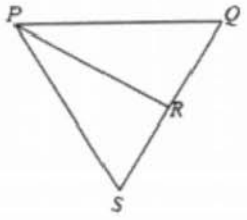
Statements	Reasons
1. D is the midpoint of $\overline{CB}$.	1. Given
2. $\overline{CD} \cong \overline{BD}$	2. a midpoint divides a segment into two congruent segments

2.



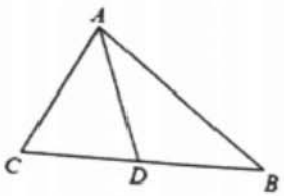
Statements	Reasons
1. $\overline{AD}$ bisects $\overline{CB}$.	1. Given
2.	2.

3.



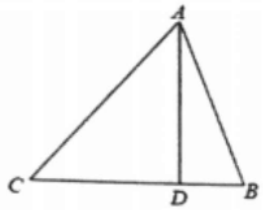
Statements	Reasons
1. $\overline{PR}$ is a median in ΔPQS.	1. Given
2.	2.

4.



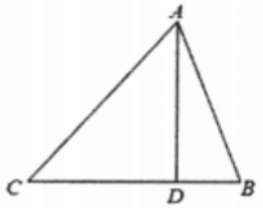
Statements	Reasons
1. $\overline{AD}$ bisects $\angle CAB$.	1. Given
2.	2.

5.



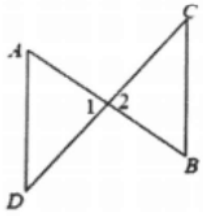
Statements	Reasons
1. $\overline{AD}$ is an altitude in ΔABC.	1. Given
2.	2.

6.



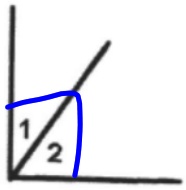
Statements	Reasons
1. $\overline{AD} \perp \overline{CB}$	1. Given
2.	2.

7.



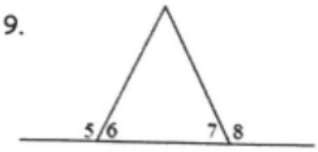
Statements	Reasons
1. ~~$\overline{AB}$~~ and ~~$\overline{CD}$~~ intersect.	1. Given
2. $\angle 1 \cong \angle 2$	2. two non-adjacent angles formed by intersecting lines are congruent

8.



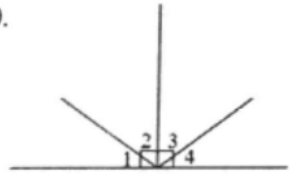
Statements	Reasons
1. $\angle 1$ and $\angle 2$ are complementary.	1. Given
2. $\angle 1 + \angle 2 = 90^\circ$	2. Complementary angles have a sum of 90°

9.



Statements	Reasons
1. $\angle 5 \cong \angle 8$	1. Given
2.	2.

10.



Statements	Reasons
1. $\angle 1 \cong \angle 4$	1. Given
2.	2.