1.5 Formalizing Geometric Proofs

In class work: For each Theorem, make a drawing, state the hypothesis and conclusion, and write a formal proof.

Theorem 1 (T1.1) **Addition Theorem for Segments**
If B is a point between A and C on segment $\overline{AC}$, Q is a point between P and R on segment $\overline{PR}$, $AB = PQ$, and $BC = QR$, then $AC = PR$.

Theorem 2 (T 1.3) **Addition Theorem for Angles**
If D is a point in the interior of $\angle ABC$, S is a point in the interior of $\angle PQR$, $m\angle ABD = m\angle PQS$, and $m\angle DBC = m\angle SQR$, then $m\angle ABC = m\angle PQR$

Theorem 3 (T 1.5) Two equal supplementary angles are right angles.

Theorem 4 (T 1.6) Complements of equal angles are equal in measure.

Corollary Complements of the same angle are equal in measure.

Theorem 5 (T 1.8) Supplements of equal angles are equal in measure.

Corollary Supplements of the same angle are equal in measure.

Theorem 6 (T 1.10) **Adjacent angles with 2 sides in a line are supplementary**
If A, B, and C are three points on a line, with B between A and C, and $\angle ABD$ and $\angle DBC$ are adjacent angles, then $\angle ABD$ and $\angle DBC$ are supplementary.

Theorem 7 (T 1.11) **Vertical angles are equal in measure**
If two lines intersect, then the vertical angles are equal in measure.