Triangle Congruency Proof Reasons

1) Given   -   Every proof starts with the original statement.

2) Definition of Midpoint   -   Midpoints divide a segment into 2 congruent segments

3) Vertical Angles   -   2 intersecting lines create 2 pairs of congruent angles.

4) Reflexive Property   -   Every angle or segment is congruent to itself.

5) Alternate Interior Angles   -   Interior angles on the opposite side of a transversal (parallel lines) are congruent.

6) Corresponding Angles   -   Angles created by transversal (parallel line) in the exact same position are congruent.

7) Definition of Perpendicular Lines   -   Perpendicular lines create two right angles.

8) Definition of Right Triangles   -   A triangle containing a right angle.

9) Right Angles Congruence   -   Two right angles are congruent to each other.

10) Third Angles Theorem   -   If you have 2 pairs of congruent angles, then the third angles are also congruent.

11) Side-Side-Side (SSS)   -   3 sides are congruent to 3 sides.

12) Side-Angle-Side (SAS)   -   2 sides and an angle in between are congruent to 2 sides and an angle in between.

13) Hypotenuse-Leg (HL)   -   In 2 right triangles, the hypotenuse and one of the legs are congruent.

14) Angle-Side-Angle (ASA)   -   2 angles and a side in between are congruent to 2 angles and a side in between.

15) Angle-Angle-Side (AAS)   -   2 angles and the next side are congruent to 2 angles and the next side.