\(\triangle A \cong \triangle B\)

\[
\angle 1 + \angle 2 = 90^\circ \\
\angle 1 + \angle 2' = 90^\circ \\
\angle 3 = 90^\circ \\
T \text{ is a square} \\
\text{Area of } T = c^2 \\
\text{Area of } S = (a + b)^2 \\
\text{Area of each } \triangle = \frac{ab}{2} \\
(a + b)^2 = c^2 + 4\frac{ab}{2} \\
a^2 + 2ab + b^2 = c^2 + 2ab \\
\therefore c^2 = a^2 + b^2
\]

SSS

\(\triangle \text{ angles sum to } 180^\circ\)

\(\angle 2 \cong \angle 2'\)

Supplementary \(\angle\)s

Equal sides, \(90^\circ\) \(\angle\)s

Area of \(\square\)

Area of \(\square\)

Area of \(\triangle\)

Sum of areas

Algebra (FOIL, simplification)

Subtract \(2ab\) from both sides.
\[ X \cup Y = \{z \mid z \in X \lor z \in Y\} \]
\[ X - Y = \{z \mid z \in X \land z \notin Y\} \]
\[ X \cap Y = \{z \mid z \in X \land z \in Y\} \]
\[ X \times Y = \{(x, y) \mid x \in X \land y \in Y\} \]
\[ \overline{X} = \{z \mid z \notin X\} \]