a   b

S

b   a

c   c

T

a   2

c

c

B   A

2   3   1   b

b   a

c   b

a

$\triangle A \cong \triangle B$	SSS
$\angle 1 + \angle 2 = 90°$	$\triangle$ angles sum to $180°$
$\angle 1 + \angle 2' = 90°$	$\angle 2 \cong \angle 2'$
$\angle 3 = 90°$	Supplementary $\angle$s
T is a square	Equal sides, $90°$ $\angle$s
Area of $T = c^2$	Area of $\square$
Area of $S = (a+b)^2$	Area of $\square$
Area of each $\triangle = \frac{ab}{2}$	Area of $\triangle$
$(a+b)^2 = c^2 + 4\frac{ab}{2}$	Sum of areas
$a^2 + 2ab + b^2 = c^2 + 2ab$	Algebra (FOIL, simplification)
$\therefore\ c^2 = a^2 + b^2$	Subtract $2ab$ from both sides.

$$X \cup Y = \{z \mid z \in X \lor z \in Y\} \qquad X - Y = \{z \mid z \in X \land z \notin Y\}$$

$$X \cap Y = \{z \mid z \in X \land z \in Y\} \qquad X \times Y = \{(x,y) \mid x \in X \land y \in Y\}$$

$$\overline{X} = \{z \mid z \notin X\}$$