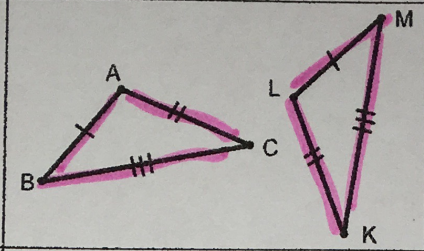
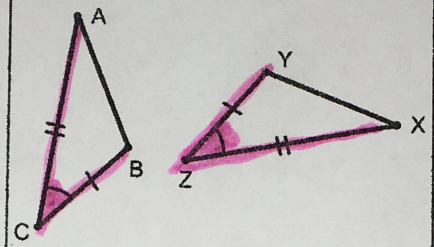
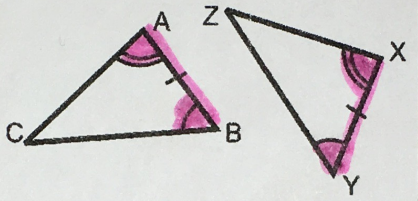
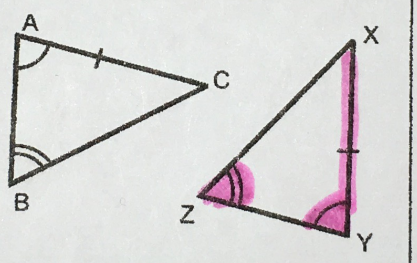
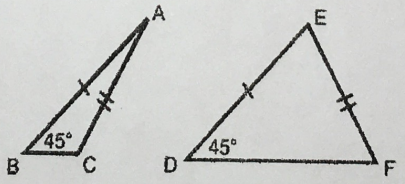
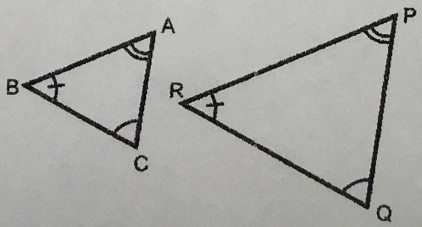
Triangle Congruence Properties

Side-Angle Relationship	Picture	Guarantees Congruence?
SSS *SIDE–SIDE–SIDE* *Three pairs of congruent sides*		$\overline{AB} \cong \overline{LM}$ $\overline{AC} \cong \overline{LK}$ $\overline{BC} \cong \overline{MK}$ } given $\triangle ABC \cong \triangle LMK$ by SSS
SAS *SIDE–ANGLE–SIDE* *Two pairs of congruent sides and one pair of congruent angles (and the angles are between the pairs of sides)*		$\overline{BC} \cong \overline{YZ}$ $\overline{AC} \cong \overline{XZ}$ $\angle C \cong \angle Z$ } given $\triangle ABC \cong \triangle XYZ$ by SAS
ASA *ANGLE–SIDE–ANGLE* *Two pairs of congruent angles and one pair of congruent sides (and the sides are between the pairs of angles)*		$\angle A \cong \angle X$ $\angle B \cong \angle Y$ $\overline{AB} \cong \overline{XY}$ } given $\triangle CAB \cong \triangle ZXY$ by ASA
AAS (or SAA) *ANGLE– ANGLE–SIDE* *Two pairs of congruent angles and one pair of congruent sides (but the sides are NOT between the pairs of angles)*		$\angle A \cong \angle Y$ $\angle B \cong \angle Z$ $\overline{AC} \cong \overline{XY}$ } given $\triangle ABC \cong \triangle YZX$ by AAS
SSA (or ASS) *Two pairs of congruent sides and one pair of congruent angles (but the angles are NOT between the pairs of sides)*		**NO** **More than one type of triangle is possible.**
AAA *Three pairs of congruent angles*		**NO** **There is no guarantee the corresponding sides are congruent.**