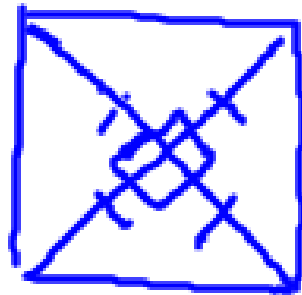


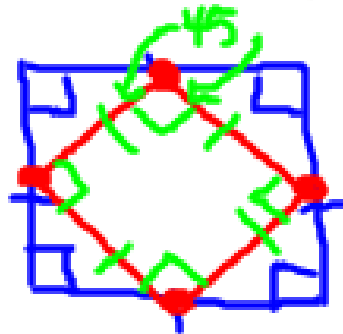
1. State whether you agree or disagree with the following statements. Justify your answers.

a. The diagonals of a square separate the square into four congruent isosceles right triangles.



yes. A square has \cong diagonals & they are \perp

b. If the midpoints of the sides of a square are connected in order, another square is formed.

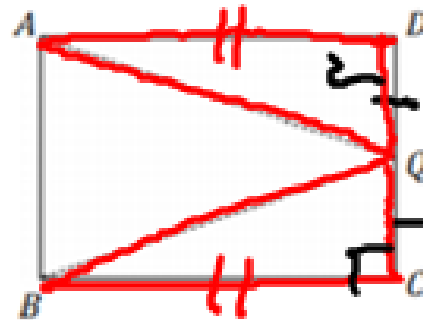


$45 + 45 = 90$
yes all sides & all \angle 's are \cong .

4. Complete the following proof.

Given: $ABCD$ is a rectangle and Q is the midpoint of \overline{CD} .

Prove: $\overline{AQ} \cong \overline{BQ}$

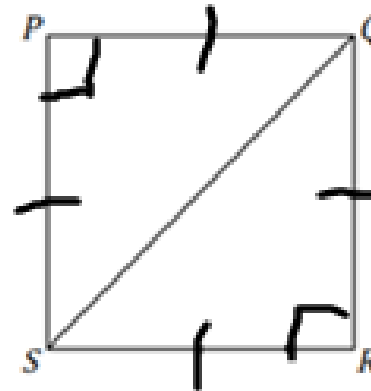


Statements	Reasons
1. $ABCD$ is a rectangle and Q is the midpoint of \overline{CD} .	1. Given
2. $\overline{DQ} \cong \overline{QC}$	2. Def of midpoint
3. $\overline{AD} \cong \overline{BC}$	3. In a rectangle, opposite sides are congruent.
4. $\angle D \cong \angle C$	4. All $\text{Rt } \angle$'s are \cong
5. $\triangle ADQ \cong \triangle BCQ$	5. SAS
6. $\overline{AQ} \cong \overline{BQ}$	6. CPCTC

2. Complete the following proof.

Given: $PQRS$ is a square.

Prove: $\overline{PR} \cong \overline{QS}$



Statements	Reasons
1. $PQRS$ is a square.	1. Given
2. $\overline{PQ} \cong \overline{SR} \cong \overline{PS} \cong \overline{QR}$	2. Definition of a square: All sides are congruent
3. $\angle P \cong \angle Q \cong \angle R \cong \angle S$	3. All Rt \angle 's are \cong
4. $m\angle P = m\angle Q = m\angle R = m\angle S$	4. Definition of congruence
5. $90^\circ = m\angle Q = m\angle R = m\angle S$	5. Substitution
6. $m\angle P = 90^\circ$	6. Substitution
7. $\triangle SPQ \cong \triangle QRS$	7. SAS
8. $\overline{PR} \cong \overline{QS}$	8. CPCTC