Name _____ Date _____ Class _____

LESSON 2-7

Review for Mastery

Flowchart and Paragraph Proofs

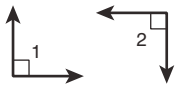
In addition to the two-column proof, there are other types of proofs that you can use to prove conjectures are true.

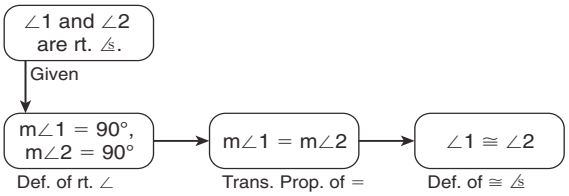
Flowchart Proof	• Uses boxes and arrows. • Steps go left to right or top to bottom, as shown by arrows. • The justification for each step is written below the box.

You can write a flowchart proof of the Right Angle Congruence Theorem.

Given: $\angle 1$ and $\angle 2$ are right angles.

Prove: $\angle 1 \cong \angle 2$

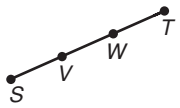




1. Use the given two-column proof to write a flowchart proof.

Given: V is the midpoint of $\overline{SW}$, and W is the midpoint of $\overline{VT}$.

Prove: $\overline{SV} \cong \overline{WT}$



Two-Column Proof:

Statements	Reasons
1. V is the midpoint of $\overline{SW}$.	1. Given
2. W is the midpoint of $\overline{VT}$.	2. Given
3. $\overline{SV} \cong \overline{VW}$, $\overline{VW} \cong \overline{WT}$	3. Definition of midpoint
4. $\overline{SV} \cong \overline{WT}$	4. Transitive Property of Equality

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LESSON 2-7

Review for Mastery

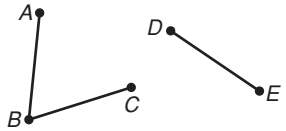
Flowchart and Paragraph Proofs continued

To write a paragraph proof, use sentences to write a paragraph that presents the statements and reasons.

You can use the given two-column proof to write a paragraph proof.

Given: $\overline{AB} \cong \overline{BC}$ and $\overline{BC} \cong \overline{DE}$

Prove: $\overline{AB} \cong \overline{DE}$



Two-Column Proof:

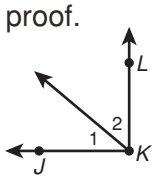
Statements	Reasons
1. $\overline{AB} \cong \overline{BC}$, $\overline{BC} \cong \overline{DE}$	1. Given
2. $AB = BC$, $BC = DE$	2. Definition of congruent segments
3. $AB = DE$	3. Transitive Property of Equality
4. $\overline{AB} \cong \overline{DE}$	4. Definition of congruent segments

Paragraph Proof: It is given that $\overline{AB} \cong \overline{BC}$ and $\overline{BC} \cong \overline{DE}$, so $AB = BC$ and $BC = DE$ by the definition of congruent segments. By the Transitive Property of Equality, $AB = DE$. Thus, by the definition of congruent segments, $\overline{AB} \cong \overline{DE}$.

2. Use the given two-column proof to write a paragraph proof.

Given: $\angle JKL$ is a right angle.

Prove: $\angle 1$ and $\angle 2$ are complementary angles.



Two-Column Proof:

Statements	Reasons
1. $\angle JKL$ is a right angle.	1. Given
2. $m\angle JKL = 90°$	2. Definition of right angle
3. $m\angle JKL = m\angle 1 + m\angle 2$	3. Angle Addition Postulate
4. $90° = m\angle 1 + m\angle 2$	4. Substitution
5. $\angle 1$ and $\angle 2$ are complementary angles.	5. Definition of complementary angles

Paragraph Proof: