Name Date

Notetaking with Vocabulary

For use after Lesson 2.5

2.5

In your own words, write the meaning of each vocabulary term.

proof – logical argument that uses deductive reasoning to show that a statement is true

two-column proof – numbered statements and corresponding reasons that show an argument in a logical order

theorem – statement that can be proven

Theorems

Theorem 2.1 Properties of Segment Congruence

Segment congruence is reflexive, symmetric, and transitive.

Reflexive For any segment *AB*, 

Symmetric If then 

Transitive If and  then 

Theorem 2.2 Properties of Angle Congruence

Angle congruence is reflexive, symmetric, and transitive.

Reflexive For any angle *A*, 

Symmetric Ifthen 

Transitive If and  then 

Notes:

Name Date

2.4

Notetaking with Vocabulary **(continued)**

Core Concepts

2.5

Notetaking with Vocabulary (continued)

Writing a Two-Column Proof

In a proof, you make one statement at a time until you reach
the conclusion. Because you make statements based on facts,
you are using deductive reasoning. Usually the first
statement-and-reason pair you write is given information.

Copy or draw diagrams and label given information to help develop proofs. Do
not mark or label the information in the
Prove statement on the diagram.

Proof of the Symmetric Property of Angle Congruence

**Given**  **Prove** 



statements based on facts that you know or on conclusions from deductive reasoning

The number of statements will vary.

Remember to give a reason for the last statement.

definitions, postulates, or proven theorems that allow you to state the corresponding statement

Notes:

Extra Practice

In Exercises 1 and 2, complete the proof.

 1. **Given** bisect each other at point *M* and 

 **Prove** 

|  |  |
| --- | --- |
| **STATEMENTS** | **REASONS** |
| **1.**  | **1.** Given |
| **2.**  | **2.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **3.**  | **3.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **4.**  | **4.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **5.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | **5.** Segment Addition Postulate (Post. 1.2) |
| **6.**  | **6.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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Notetaking with Vocabulary **(continued)**

 2. **Given** 

 **Prove** 

|  |  |
| --- | --- |
| **STATEMENTS** | **REASONS** |
| **1.**  is a complement of  | **1.** Given |
| **2.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | **2.** Definition of complementary angles |
| **3.**  | **3.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **4.**  | **4.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **5.**  | **5.** Definition of supplementary angles |
| **6.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | **6.** Substitution Property of Equality |
| **7.**  | **7.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

In Exercises 3 and 4, name the property that the statement illustrates.

 3. If 

 4. If 

 5. Write a two-column proof.

 **Given** *M* is the midpoint of 

 **Prove** 

|  |  |
| --- | --- |
| **STATEMENTS** | **REASONS** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |