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| 1. Given: In , ;  is a right angle.  Prove: and are complementary.  ​  Provide all *statements and reasons* for this proof.   |  |  | | --- | --- | | *ANSWER:* | Proof:  S1. R1. Given  S2. is a right angle. R2. Given  S3. R3. Definition of right angle  S4. R4. Substitution Prop. of Equality  S5. R5. Subtraction Property of Equality  S6. and are comp. R6. Definition of complementary angles | |

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| 2. Given:  Prove:   Provide the missing *reasons* for this proof:  S1. R1. S2. R2. S3. R3. S4. R4. S5. R5.   |  |  | | --- | --- | | *ANSWER:* | R1. Given  R2. Distributive Law  R3. Substitution Property of Equality  R4. Addition Property of Equality  R5. Division (or Multiplication) Prop. of Eq. | |

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| 3. Given:  Prove:   Provide the *statements* for this proof.  S1. R1. Given S2. R2. Distributive Law (FOIL) S3. R3. Substitution Proerty of Equality S4. R4. Addition Property of Equality   |  |  | | --- | --- | | *ANSWER:* | S1.  S2.  S3.  S4. | |

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| 4. Given:  Prove:   Supply all *statements and reasons* for the proof.   |  |  | | --- | --- | | *ANSWER:* | Proof:  S1. R1. Given    S2. R2. Subraction Prop. of Equality    S3. R3. Multiplication Property of Equality | |

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| 5. Given: is a right angle Prove: and are complementary  Supply missing *statements* and missing *reasons* for this proof.  S1. R1. Given S2.  R2. S3. R3. Angle-Addition Postulate S4.  R4. S5. R5.   |  |  | | --- | --- | | *ANSWER:* | S1. is a right angle  R2. Definition of right angle  R4. Substitution Property of Equality  S5. and are complementary  R5. Definition of complementary angles | |

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| 6. Given: *A*-*B*-*C*-*D* as shown Prove:   Supply missing *statements* and missing *reasons* for this proof:  S1. R1. S2. R2. S3. R3. Segment-Addition Postulate S4. R4. Substitution Property of Equality   |  |  | | --- | --- | | *ANSWER:* | S1. *A*-*B*-*C*-*D* as shown  R1. Given  R2. Segment-Addition Postulate  S4. | |

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| 7. Given: is complementary to ;  is complementary to (no drawing provided)  Prove:  ​  Supply missing *reasons* for this proof.  ​  S1. is complementary to R1.  S2. is complementary to R2.  S3.  R3.  S4.  R4.  S5. R5.  S6. R6.  S7, R7.   |  |  | | --- | --- | | *ANSWER:* | R1. Given  R2. Given  R3. Definition of complementary angles  R4. Definition of complementary angles  R5. Substitution Property of Equality  R6. Subtraction Prperty of Equality  R7. Definition of Congruent Angles | |

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| 8. Given: and are supplementary Prove:   Supply missing *statements* and missing *reasons* for this proof.  S1. and are supplementary R1. S2. R2. If the exterior sides of 2 adjacent angles form a straight line, the angles are supplementary. S3. R3. Two angles that are supplementray to the same angle are congruent.   |  |  | | --- | --- | | *ANSWER:* | R1. Given  S2. and are supplementary.  S3. | |

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| 9. Provide missing *statements* and *reasons* for the following proof. Given: bisects  Prove:   S1. R1. Given S2. R2. S3. R3. Angle-Addition Postulate S4. R4. *or*   |  |  | | --- | --- | | *ANSWER:* | S1. Given  R2. Definition of angle-bisector  S3.  S4.  R4. Substitution Property of Equality | |

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| 10. Supply missing *statements* and *reasons* for the following proof.  Given: and intersect at point *X* Prove:   S1. R1. S2. and are supp. R2. S3. R3. If the exterior sides of two adjacent angles form a straight line, these angles are supplementary. S4. R4. Two angles that are supplementary to the same angle are congruent.   |  |  | | --- | --- | | *ANSWER:* | S1. and intersect at point *X*  R1. Given  S3. and are supp.  S4. | |

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| 11. Prove: Any two right angles are congruent.  ​  Use the following drawing. Provide all *statements* and *reasons.*  ​  Given: Right angles 1 and 2  Prove:   |  |  | | --- | --- | | *ANSWER:* | S1. Right angles 1 and 2  R1. Given  S2.  and  R2. The measure of a right angle is 90.  S3.  R3. Substitution Property of Equality  S4.  R4. Definition of congruent angles. | |

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| 12. Supply all *statements* and *reasons* in the following proof.  Given: is a right angle. Prove: and are complementary.   |  |  | | --- | --- | | *ANSWER:* | S1. is a right angle. R1. Given  S2.  R2. Definition of right angle  S3. R3. Angle-Addition Postulate  S4.  R4. Substitution Property of Equality  S5. and are complementary. R5. Definition of complementary angles. | |

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| 13. In the figure, *A*-*B*-*C*. Explain why and must be supplementary.   |  |  | | --- | --- | | *ANSWER:* | In the figure, is a straight angle. By definition, .  But by the Angle-Addition Postulate.  Then by substitution.  By definition, and are supplementary. | |