

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

**DIRECTIONS:** For #1-8, use the provided blanks to write the names of the properties that are used to prove the statements.

1.  $\overline{AB} \cong \overline{AB}$  .

\_\_\_\_\_

2. If  $5(YZ) = 35$ , then  $YZ = 7$  .

\_\_\_\_\_

3. If  $\sphericalangle 5 \cong \sphericalangle 6$ , then  $\sphericalangle 6 \cong \sphericalangle 5$  .

\_\_\_\_\_

4. If  $9d = 45$ , then  $d = 5$ .

\_\_\_\_\_

5. If  $c + 6 = 11$ , then  $c = 5$  .

\_\_\_\_\_

6. If  $6(2x + 7y)$ , then  $12x + 42y$  .

\_\_\_\_\_

7. If  $m\angle MNP - 21 = 70$ , then  $m\angle MNP = 91$ .

\_\_\_\_\_

8. If  $\frac{t}{8} = 9$ , then  $t = 63$  .

\_\_\_\_\_

**DIRECTIONS:** For #9-10, use the provided blanks to write the names of the properties that are used to prove the statements (just like Page 1).

9. If  $\overline{AC} \cong \overline{GH}$  and  $\overline{GH} \cong \overline{ST}$ , then  $\overline{AC} \cong \overline{ST}$ .

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10. If  $2x + 6y = 44$  and  $x = 4p$ , then  $8p + 6y = 44$ .

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**DIRECTIONS:** For #11-14, use the given conditional to answer the questions in the provided blanks.

**Given:** If the temperature is below 32°F, then the water will freeze.

11. Write the hypothesis.

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12. Write the conclusion.

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13. Write the converse.

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14. Is the converse TRUE or FALSE (write the entire word)? \_\_\_\_\_

**DIRECTIONS:** For #15-18, use the given conditional to answer the questions in the provided blanks.

**Given:** If  $m\angle W = 25$ , then  $\angle W$  is not obtuse.

**15.** Write the hypothesis.

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**16.** Write the conclusion.

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**17.** Write the converse.

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**18.** Is the converse TRUE or FALSE (write the entire word)? \_\_\_\_\_

**DIRECTIONS:** For #19-21, provide counterexamples to disprove the statements. You may use words or draw a clearly labeled diagram.

**19.** A month has 31 days.

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**20.** If  $x^2 > 49$ , then  $x > 7$ .

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**21.** Complementary angles must be adjacent.

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**DIRECTIONS:** For #22, rewrite the following pair of conditionals as a biconditional.

If  $\angle ABC = 90$  , then  $\angle ABC$  is a right angle.

If  $\angle ABC$  is a right angle, then  $\angle ABC = 90$  .

**22.** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**DIRECTIONS:** For #23, use algebra properties to fill in the right sides of this proof.

**23.**

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|----------------------|-------|
| $14x - 8 = 10x + 36$ | Given |
| $4x - 8 = 36$        | _____ |
| $4x = 44$            | _____ |
| $x = 11$             | _____ |