ANSWERS!

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

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

<p align="center">**Reflexive Property**</p>

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

<p align="center">**Division (or Multiplication) Property**</p>

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

<p align="center">**Symmetric Property**</p>

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

<p align="center">**Division (or Multiplication) Property**</p>

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

<p align="center">**Subtraction (or Addition) Property**</p>

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

<p align="center">**Distributive Property**</p>

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

<p align="center">**Addition Property**</p>

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

<p align="center">**Multiplication Property**</p>

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 $\overline{AC} \cong \overline{ST}$.

Transitive Property (or Substitution)

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

Substitution Property

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.

The temperature is below 32°F

12. Write the conclusion.

The water will freeze

13. Write the converse.

If the water will freeze, then the temperature is below 32°F

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

<u>DIRECTIONS</u>: For #15-18, use the given conditional to answer the questions in the provided blanks.

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

15. Write the hypothesis.

$m\sphericalangle W = 25$

16. Write the conclusion.

$\sphericalangle W$ **is not obtuse**

17. Write the converse.

If $\sphericalangle W$ **is not obtuse, then** $m\sphericalangle W = 25$

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

<u>DIRECTIONS</u>: 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.

February, April, June, September, November (need only one)

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

Any number less than -7 **is a correct answer (such as** -8 **or** -20**)**

21. Complementary angles must be adjacent .

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. **$\angle ABC = 90$ if and only if $\angle ABC$ is a right angle**
                        OR
$\angle ABC$ is a right angle if and only if $\angle ABC = 90$

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

23.

$14x - 8 = 10x + 36$	Given
$4x - 8 = 36$	**Subtraction (or Addition) Property**
$4x = 44$	**Addition Property**
$x = 11$	**Division (or Multiplication) Property**