Geometry- Mrs. Tilus Name: _____
Unit 2- Worksheet #2: Conditional Statements

1. The _____ of a conditional statement is found by switching the hypothesis and the conclusion.

Rewrite the conditional statement in if-then form

2. When $x = 6$, $x^2 = 36$

3. The measure of a straight angle is 180°

4. Only people who are registered are allowed to vote.

For the given statement, write the hypothesis, conclusion, converse, inverse and contrapositive. If possible, write a biconditional statement.

5. *If two angles are complementary, then the two angles add up to 90°*

What is the hypothesis? _____

What is the conclusion? _____

Write the converse: _____

_____

Write the inverse: _____

_____

Write the contrapositive: _____

_____

If you can, write as a biconditional statement:_____

_____

6. *If an animal is an ant, then it is an insect.*

What is the hypothesis? _____

What is the conclusion? _____

Write the converse: _____

_____

Write the inverse: _____

_____

Write the contrapositive: _____

_____

If you can, write as a biconditional statement:_____

7. Describe and correct the error in writing the if-then.

Given statement: All high school students take four English courses.

If-then statement: If a high school student takes four courses, then all four are English courses.

Decide whether the statement is true or false. If false, provide a counterexample.

8. If a polygon has five sides, then it is a regular pentagon.

9. If $m\angle A$ is 85°, then the measure of the complement of $\angle A$ is 5°

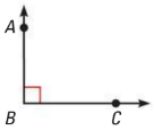
10. Supplementary angles are always linear pairs.

11. If a number is an integer, then it is rational

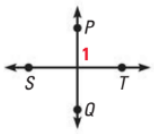
12. If a number is a real number, then it is irrational.

Decide whether each statement about the diagram is true. Explain your answer using the definitions you have learned.

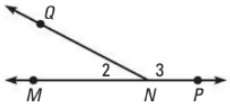
13. $m\angle ABC = 90°$



14. $\overleftrightarrow{PQ} \perp \overleftrightarrow{ST}$



15. $m\angle 2 + m\angle 3 = 180°$



Rewrite the definition as a biconditional statement.

16. An angle with a measure between 90° and 180° is called obtuse.

17. Two angles are a linear pair if they are adjacent angles whose noncommon sides are opposite rays.

Determine whether the statement is a valid definition.

18. If two rays are opposite rays, then they have a common endpoint.

19. If the sides of a triangle are all the same length, then the triangle is equilateral.

20. The Venn diagram represents all of the musicians at a high school. Write an if-then statement that describes a relationship between the various groups of musicians.