Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1-6

Logic

Use this statement for the1 - 3: **If it’s fuzzy, then it’s itchy.**

1. Write its converse:
2. Write its inverse:
3. Write its contrapositive
4. Which of the following must be proven before it’s accepted as a rule in math?

Definition Theorem Postulate

1. What’s the contrapositive of “If it’s not good, then it’s bad”?
2. What’s the inverse of “If it’s not hard, then I can handle it”
3. The statement, “If it’s yellow, then it’s a school bus” is not true. What’s a counterexample that shows it false?
4. Use the law of syllogism to make a valid conclusion:

If it’s stormy, then I can’t sleep

If I can’t sleep, then I won’t be rested.

If I’m not rested, then I won’t pass my quiz.

Conclusion:

1. What’s the converse of *p* => *~q*
2. What’s the contrapositive of *~w* => *z*

Logic Practice

Use the Law of Syllogism (Transitive Property) to determine the logical conclusion for each of the following. If the statements do not follow the pattern, write “No Valid Conclusion”.

Law of Syllogism

(Transitive Property) OR \_

p → q p → q

q → r q → r Conclusion: p → r

r → s Conclusion: p → s

1. If I go on vacation, I’ll spend money.

If I spend money, I’ll be broke.

If I’m broke, I’ll have to get another job.

Conclusion: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. If I pass geometry, I won’t have to go to summer school.

If I don’t go to summer school, I’ll get a job.

If I get a job, I’ll make money.

Conclusion: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. If it’s sunny Saturday, then I’ll go to the beach.

If I go to the beach, then I’ll lay in the sun.

If I lay in the sun, I’ll get a sunburn.

Conclusion: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. If I don’t wear a sweater, I’ll get a cold.

If I get a cold, I’ll get sick.

If I get sick, I’ll miss the dance.

Conclusion: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. If 2 angles form a linear pair, then they are supplementary.

If 2 angles are supplementary, then their sum is 180°.

Conclusion: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. If 2 angles are right angles, then they are 90\*.

If 2 angles are 90\*, then they have equal measures.

If angles have equal measures, then they are congruent.

Conclusion: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_