NAME _____

1. Find the next two terms in each pattern:

    a) Tue, Fri, Mon, Thu, …

    1a) _____

    b) $1.01, $10.01, $100.01, …

    1b) _____

2. Complete the conjecture: The sum of 4 odd numbers is a(n) _____ number.

3. Determine whether the conjecture is true or false. If the statement is false, give a counterexample:

                         "The quotient of two even numbers is always even."

4. Consider the following statements. Determine if each statement is true or false. If false, provide a counterexample.

"If 2 angles are congruent, then they are vertical angles." TRUE/ FALSE?	*"If 2 angles form a linear pair, then they are supplementary."* TRUE/ FALSE?
Is the converse TRUE/FALSE? Why?	Is the converse TRUE/FALSE? Why?

5. Consider the statement: *"Right angles are always congruent to one another."*

    a) Rewrite the sentence as a conditional. Then circle the hypothesis and underline the conclusion

6. Consider the conditional statement: *"If two angles form a linear pair, then the angles are supplementary."* Write the converse, inverse, and contrapositive of this true statement. Find the truth value of each.

    a) Converse: _____

                                           True / False

    b) Inverse: _____

                                           True / False

    c) Contrapositive: _____

                                           True / False

    d) Biconditional: _____

                                           True / False

7. Determine if the conjecture is valid by the Law of Syllogism: 7) Valid/Invalid (circle one)

    Given: If your parents are upset, they will not let you borrow the car.
                          If you do not obey your curfew, your parents will be upset.

    Conclusion: If you do not obey your curfew, your parents will not let you borrow the car.

    Correction if invalid: _____

8. Draw a conclusion based on all three of the following given statements

    Given: If Susan gets a raise, then she will move into her own apartment.
                          If Susan has the top sales numbers this month, then she will get a raise.
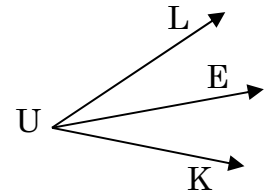   Susan has the top sales numbers this month.

    Conclusion: _____

9. Identify the property that justifies each statement:

    a) $\angle A \cong \angle A$ a)   _____

    b)   IF $\overline{AB} \cong \overline{CD}$ and $\overline{CD} \cong \overline{EF}$, then $\overline{AB} \cong \overline{EF}$ b)   _____

    c)   IF $\overline{QU} \cong \overline{IZ}$, then $\overline{IZ} \cong \overline{QU}$ c)   _____

    d)   If $\angle$G $\cong$ $\angle$E and $\angle$G is supplementary to $\angle$O,   d)   _____
            then $\angle$E is supplementary to $\angle$O.

Fill in the conclusion using the diagram. Then provide a reason using a definition, theorem or postulate.

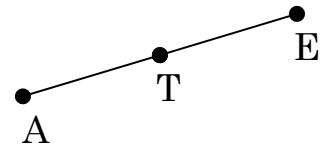10. Given: $\overrightarrow{UE}$ bisects $\angle$LUK

    Conclusion: _____

    Reason: _____

11. Given: $\overline{AT} \cong \overline{TE}$

    Conclusion: _____

    Reason: _____

12. Given: $\angle G$ and $\angle E$ are supplementary
              $\angle E$ and $\angle O$ are supplementary

    Conclusion: _____

    Reason: _____