**2.3 HW Conditional Statements & Counterexamples Geometry**

**Directions: Identify the hypothesis and conclusion of each conditional.**

1) If you can see the sun, then it is daytime. 2) If a figure has 8 sides, then it is an octagon.

Hypothesis: Hypothesis:

Conclusion: Conclusion:

3) If two angles form a linear pair, then the 4) If x + 3 = 8, then 8 = x + 3.

 angles are supplementary.

Hypothesis: Hypothesis:

Conclusion: Conclusion:

**Directions: Write a conditional statement.**

5) Congruent angles have equal measures. 6) On Wednesday, soccer practice is at 5:00.

7) Alternate exterior angles are congruent when 8) Two perpendicular lines form four right angles.

 two lines are parallel and cut by a transversal.

**Directions: Show that the conditional statement is false by finding a counterexample.**

9) If a number is divisible by 5, then it is odd. 10) If an animal is an insect, then it is a fly.

11) If x > 3, then x > 5. 12) If $∠$A & $∠$B are supplementary, then

 m$∠$A = 120ᴼ & m$∠$B = 60ᴼ.

13) If x2 = 49, then x = 7. 14) If two lines are $∥$, cut by a transversal, then the

 same side interior angles are $≅$.

**Directions: Write the definition as a biconditional.**

15) An isosceles triangle has at least 2 $≅$ sides. 16) Adjacent $∠$’s are 2 $∠$’s that share a side.

**Directions: Write the converse, inverse, and contrapositive. Then find the truth value for each statement. If appropriate, then write the biconditional statement.**

17) If an angle is 90ᴼ, then it is a right angle.

T F Converse:

T F Inverse:

T F Contrapositive:

T F Biconditional:

18) If two angles are right angles, then the angles are congruent.

T F Converse:

T F Inverse:

T F Contrapositive:

T F Biconditional:

19) If two lines are perpendicular, then they form right angles.

T F Converse:

T F Inverse:

T F Contrapositive:

T F Biconditional:

20) If a figure is a rectangle, then it has 4 sides.

T F Converse:

T F Inverse:

T F Contrapositive:

T F Biconditional: