Geometry Name_____

2-1 Assignment: Patterns and Conjectures

Section____ Grade (%)_____

Identify a pattern in the lists of numbers. Then use that pattern to find the next number.

1) 5, 8, 13, 20, 29, 40, _____

2) 4, 5, 7, 10, 14, 19, _____

3) 1, 4, 9, 16, 25, 36, _____

4) 15, 12, 9, 6, _____

5) 3, 1, 4, 1, 5, 9, 2, _____

6) 2, 5, 11, 23, 47, 95, _____

7) 1, 1, 2, 3, 5, 8, 13, 21, _____

8) 1, 8, 27, 64, 125, 216, _____

Determine whether the conjecture is true or false. If false, provide a counter example.

9) The sum of any two consecutive integers is always odd.

10) The product of two numbers is always larger than either number.

11) If $\overline{LM} = MP$, then M must be the midpoint of $\overline{LP}$.

12) If points A, B, and C are collinear, then $\overleftrightarrow{AB}$ and $\overleftrightarrow{BC}$ are the same line.

13) If two congruent angles are supplementary, then each angle must equal 90°.

14) If two angles are complementary, only one angle must be acute.

15) Vertical angles are never complementary angles.

16) Two angles that are supplementary to the same angle must be congruent.

17) Any three non-collinear points determine a plane.

18) Complementary angles are adjacent angles.

Write the appropriate statement.

19) p: The sum of two angles is 90°.
q: Each angle is acute.

$p \wedge q$

20) p: A point lies on the bisector of an angle.
q: The point is equidistant from the sides of the angle.

$\neg p \vee q$