Name: Key Date: _____ Hour: ____

INDUCTIVE REASONING HOMEWORK: 2.1

Find the next three terms in the sequence and describe the pattern that helped you find those terms.

1) 2, 4, 7, 11, 16, 22, 29

2) 0, 3, 10, 21, 36, 55, 78, 105, 136

3 7 11 15 19 23 27 31

3) -1, -1, 0, 2, 5, 9, 14, 19, 25

+0 +1 +2 +3 +4 +5 +6

Generate a sequence using the following patterns. Find the first three terms.

4) Starting with 3, each term is 2 times the previous term.

3, 6, 12, 24

5) Starting with 1, each successive term is the next square number.

1, 4, 9, 16

6) Starting with 4, subtract 10 to get each successive term in the sequence.

4, -6, -16, -26

State whether each conjecture is *true* or *false*. If it is false, give a counter example.

7. The product of an odd integer and an even integer is odd.

$3(3x) = 9x$ False

8. The perfect squares alternate between odd and even numbers.

1, 4, 9, 16, 25 TRUE

Determine whether each conjecture is *true* of *false*. Give a counter example for any **false** conjecture. *You MUST draw a picture for your counter example.*

9. **Given**: Points A, B, and C are collinear.
Conjecture: $AB + BC = AC$

False

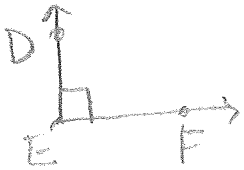
$AC + CB = AB$

10. **Given**: <R and <S are supplementary and the same <R and <T are supplementary.
Conjecture: <T and <S are congruent.

$\angle R + \angle S = 180 \quad \angle R + \angle T = 180$

TRUE

11. **Given**: $\overline{DE} \perp \overline{EF}$
Conjecture: <DEF is a right angle.



TRUE

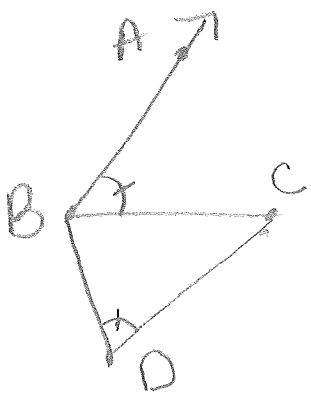
12. **Given**: <1+<2=90
Conjecture: <1 and <2 are adjacent and form a right angle

False

13. **Given:** <3 and <4 form a linear pair
Conjecture: <3 and <4 are adjacent

TRUE

14. **Given:** <ABC ≅ <CDB
Conjecture: $\overrightarrow{BC}$ is an angle bisector



False