**Inductive Reasoning Notes & Practice: 2.1**

Conjecture:

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Inductive Reasoning:

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Deductive Reasoning:

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Counter Example:

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Example:

1) 2, 4, 7, 11, \_\_\_\_, \_\_\_\_, \_\_\_\_ 2) 0, 3, 10, 21, 36, 55, \_\_\_\_, \_\_\_\_, \_\_\_\_

3) -1, -1, 0, 2, 5, 9, \_\_\_\_, \_\_\_\_, \_\_\_\_ 4) 1, 3, 6, 10, \_\_\_\_, \_\_\_\_, \_\_\_\_

5) 3, 5, 9, 17, \_\_\_\_, \_\_\_\_, \_\_\_\_ 6) 3, 7, 13, 19, \_\_\_\_, \_\_\_\_, \_\_\_\_

**Make a conjecture based on the given information. DRAW a figure to illistrate your conjecture.**

1. For points P, Q, and R, PQ=9, QR=15, and PR=12.

**Draw: Conjecture:**

2. K is the midpoint of $\overbar{JL}$.

**Draw: Conjecture:**

Determine whether each conjecture is *true* of *false*. Give a counter example for any **false** conjecture.

3. Given: $\overbar{AB}≅\overbar{BC}$

 Conjecture: B is the midpoint of $\overbar{AC}$.

Plan of attack:

4. Given: (2x-1)+(2x+1)

 Conjecture: the sum of two odd integers is even.

Plan of attack:

5. Given: $-\left(x\right)=-x, $where x is an integer.

 Conjecture: The opposite of an integer is a negative integer.

Plan of attack:

6. Given: <ABC and <DEF are supplementary.

 Conjecture: <ABC and <DEF form a linear pair.

Plan of attack:

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour: \_\_\_\_\_**

**Inductive Reasoning Homework: 2.1**

**Fill in the blank:**

1. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a guess based on analyzing information or observing patterns.

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is used when we make a conjecture after looking at several situations.

3. To prove a conjecture false, we must show at least one \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

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

4) 2, 4, 7, 11, \_\_\_\_, \_\_\_\_, \_\_\_\_

5) 0, 3, 10, 21, 36, 55, \_\_\_, \_\_\_, \_\_\_\_

6) -1, -1, 0, 2, 5, 9, \_\_\_\_, \_\_\_\_, \_\_\_\_

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

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

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

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

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

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

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

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.*

12. **Given**: Points A, B, and C are collinear.

 **Conjecture**: $AB+BC=AC$

13. **Given**: <R and <S are supplementary and the same <R and <T are supplementary.

 **Conjecture**: <T and <S are congruent.

14. **Given**: $\overbar{DE}⊥\overbar{EF}$

 **Conjecture**: <DEF is a right angle.

For more practice: pg 80 #9-29 odd