Lesson 3-6 Vocabulary and Notes:

In the following problems the four items have a common bond. Write the common bond in the space provided (be specific). The first one has been done for you.

1) 1, 3, 5, 7, ... they are all odd numbers

2) May, August, January, October _____ Months with 31 days

3) level, radar, madam, tenet ______ Palindromes

4) Da Gama, Columbus, Magellan, Raleigh _____ Explorers

Below are four groups of the first letters from rather common sequences. So if you saw S, M, T, W, T, F, S you would know that the group is the days of the week. Try to identify the following sequences.


6) O, T, T, F, F, S, S, E, N, T _____ numbers 1 - 10

7) M, V, E, M, J, S, U, N _____ planets

8) I, F, Y, M _____ U.S. customary measures

Try to figure out the following series and write the next number.

9) 1, 3, 5, 7, 9, ____11____

10) 3, 9, 27, 81, ____243____

11) 1, 3, 6, 10, ____15____

12) 2, 4, 5, 10, 11, 22, 23, 46, 47, ____94____
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<th><strong>Deductive Reasoning</strong></th>
<th><strong>Inductive Reasoning</strong></th>
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<tr>
<td>Conclusion based on accepted statements (definitions, postulates, previous theorems, corollaries, and given information)</td>
<td>Conclusions based on several past observations (patterns)</td>
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<tr>
<td>Conclusion <em>must</em> be true if hypotheses are true.</td>
<td>Conclusion is <em>probably</em> true but not necessarily true.</td>
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Tell whether the following process represents deductive or inductive reasoning.

1) Raymond noticed that spaghetti had been on the school menu for the past five Wednesdays. Raymond decides that the school always serves spaghetti on Wednesdays.

   **Inductive Reasoning**

2) By using the definitions of equilateral triangle and of perimeter, Katie concludes that the perimeter of every equilateral triangle is three times the length of a side.

   **Deductive Reasoning**

Accept the two statements as given information. State a conclusion based on deductive reasoning. If no conclusion can be reached, write none.

3) Chan is older than Pedro
   Pedro is older than Sarah

   Chan is older than Sarah

4) Valerie is older than Greg
   Dan is older than Greg

   no conclusion

Write the equation you think should come next.

5) \(9 \times 9 + 7 = 88\)
   \(98 \times 9 + 6 = 888\)
   \(987 \times 9 + 5 = 8888\)
   \(9876 \times 9 + 4 = 88888\)