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

**Worksheet 1**

**Complete the following problems using Polya’s Problem Solving Strategies. Show your work.**

1. Mark and Jim began reading a novel on the same day. Mark reads 8 pages a day and Jim reads 4 pages a day. If Mark is on page 64, on what page is Jim?

2. The 14 digits of a debit card are written in the boxes below. If the sum of

any three consecutive digits is 18, what is the value of X?

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| X=? |  |  | 6 |  |  | 6 |  |  | 6 |  | 8 |  | 4 |

3. List Polya’s four steps for problem solving.

4. How many squares, of any possible size, are on a 5 × 5 chessboard?

(Hint: Check your class notes.)

5. Use a traditional clock face to determine the next three terms in the

following sequence. 3, 8, 1, 6, 11, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

6. Identify the pattern as geometric or arithmetic and find the next

three terms.

(a) 3, 9, 27, 81 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

(b) 7, 12, 17 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

7. **Challenge**: Sometimes an arithmetic sequence may have a pattern that is more difficult to find.

Take a look at these numbers: 2, 4, 12, 26, 46, 72, \_\_\_\_\_\_\_\_\_

1. What is the next number?
2. What pattern did you find?

8. There are 7 people in a room and each person shakes hands exactly once with everyone else. How many handshakes take place?

9. Pascal’s Triangle begins with Row 0, which is the number “1”.

Write Row 5 of Pascal’s triangle here.

10. What is the 15th term of the following sequence 7, 14, 21, 28?