Name: _*Key*_   Date: _June 11, 2015_

1. How many different squares are in an 8x8 square? **Show your reasoning.**

$2 \times 2 = 5$ 4×4 $8 \times 8 = 64 + 49 + 36 + 25$

$+ 16 + 9 + 4 + 1$

$= 17$

$= 204$

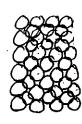3×3 $\bigg\} + 4$

$= 10$ $7 + 6$

2. Use inductive reasoning to determine the next term in the sequence.

$$-\frac{1}{3}, \quad \frac{1}{9}, \quad -\frac{1}{27}, \quad \frac{1}{81}, \quad ? \quad = \quad -\frac{1}{243}$$

$\uparrow$ $\uparrow$ $\uparrow$ $\uparrow$ $\uparrow$

3^1 3^2 3^3 3^4 3^4

3. Based upon your knowledge of problem 1.2#32 (Stacking Baseballs) and the work we did in class yesterday, determine the following: If a stack of baseballs has a rectangular base that is six balls long and four balls wide, and is stacked with as many balls as possible, how many balls will be in the stack? Note: we can only place a ball on the stack if it is resting on four other balls.

$6 \times 4 = 24$

$5 \times 3 = 15$

$4 \times 2 = 8$ $\bigg\}$ 50 Balls

$3 \times 1 = 2$