Montlake Math Challenge

January 8, 2009

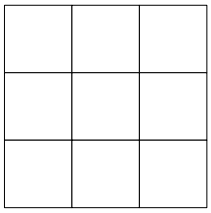
Happy New Year!

Problem 1: Do the following computations:

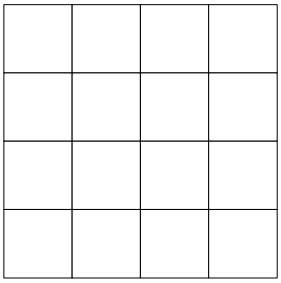
1. 3^2-2^2 = _____
2. 4^2-3^2 = _____
3. 5^2-4^2 = _____
4. 6^2-5^2 = _____

Do you notice a pattern?

Problem 2: If all of the squares in the grid below are 1cm by 1cm, what area represents 3^2 cm^2? What area represents 2^2 cm^2? What area represents 3^2 $cm^2 - 2^2$ cm^2?



What area in the grid below represents 4^2 cm^2? What area represents 3^2 cm^2? What area represents 4^2 $cm^2 - 3^2$ cm^2?



Problem 3: Based on problem 2, try to answer the following questions by interpreting the quantities in terms of areas.

1. 10^2-9^2 = _____
2. 12^2-11^2 = _____
3. 173^2-172^2 = _____
4. 1492^2-1491^2 = _____
5. $n^2-(n-1)^2$ = _____