Mathletes Problem of the Week #24
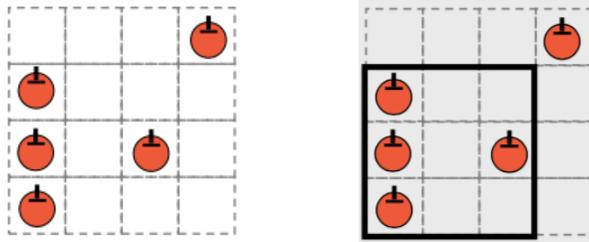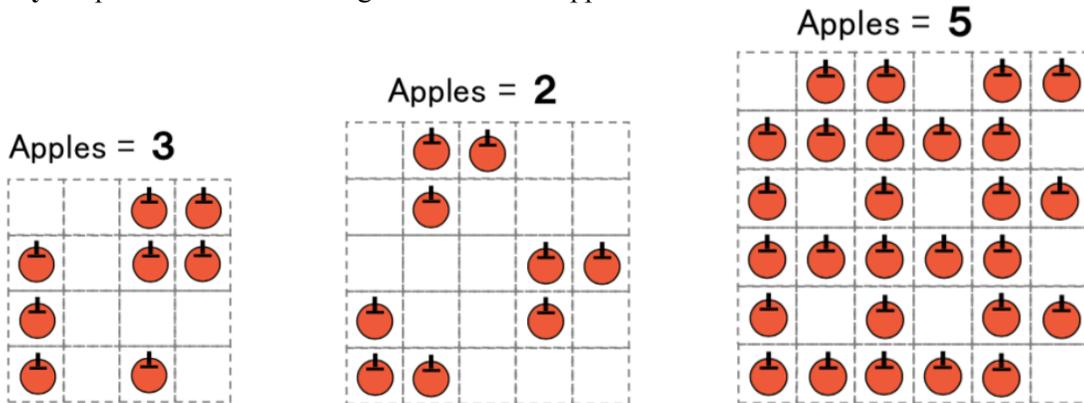
Apples and Oranges

This week we will look at some puzzles by Japanese puzzle-master **Naoki Inaba**. In these puzzles, you have to find a square region within the given grid that contains exactly the fruit that is asked for. For example, if you are given the grid above on the left and asked to find a 3 by 3 square within it that contains four apples, the solution would be the area shown on the right. There will always be only one possible solution to each puzzle. Ready?

a. Find a **3 by 3** square that contains the given number of apples.

Apples = **3**

Apples = **2**

Apples = **5**

b. Find a **2 by 2** square that contains the given number of apples.

Apples = **5**
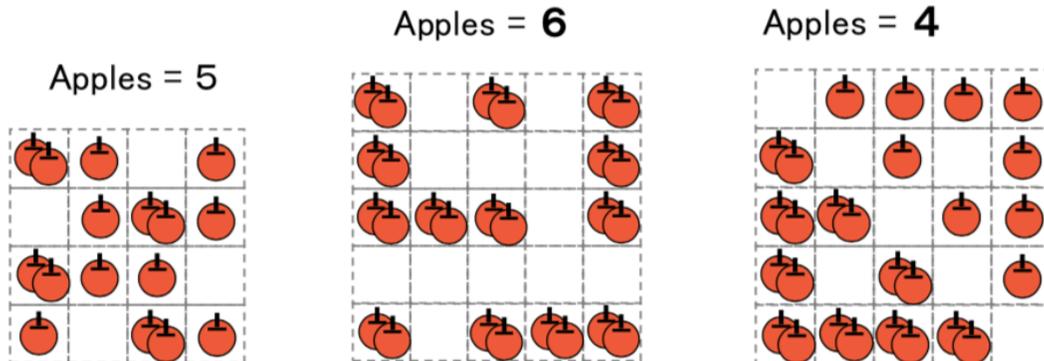
Apples = **6**

Apples = **4**

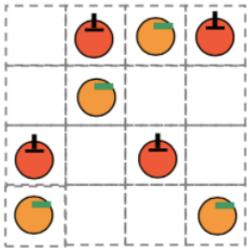(more puzzles on the next page!)

Name _____   Class _____
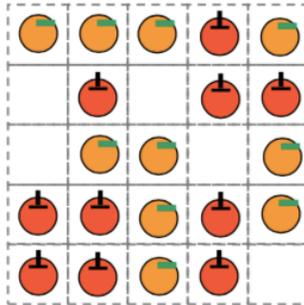
(First and last name, please!)   **Solutions due: June 12th**

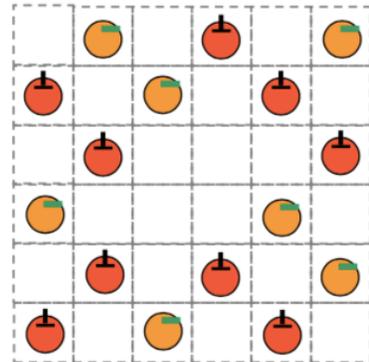c. Find a **3 by 3** square that contains the fruit as listed.

Apples = Oranges
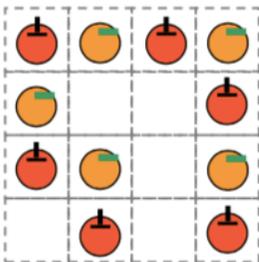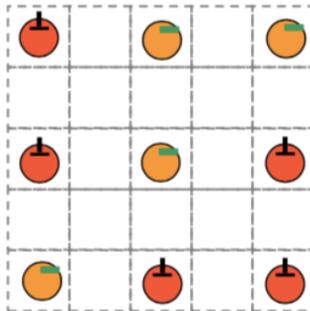
Oranges < Apples

Apples < Oranges

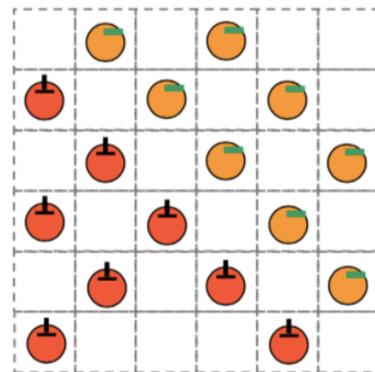d. Find a **3 by 3** square that contains the fruit as listed.

Difference = 2

Difference = 1

Difference = 2

e. What puzzles can you create with the following grids? Can you find the amount Inaba asked for? *(Hint: He used a 3 by 3 grid for each one of these. And remember, in his puzzles, there is only one possible solution.)*