



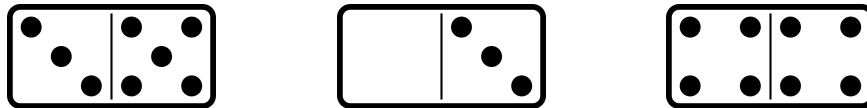
## Problem of the Week

### Problem C

#### Domi Knows

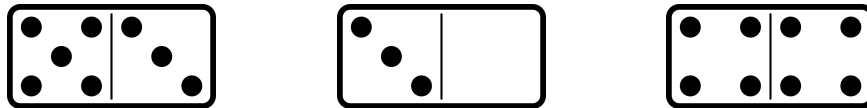
A domino tile is a rectangular tile with a line dividing its face into two square ends. Each end is marked with a number of dots (also called pips) or is blank.

The first domino shown below is a  $[3, 5]$  domino, since there are 3 pips on its left end and 5 pips on its right end. The second domino shown below is a  $[0, 3]$  domino, since there are 0 pips on its left end and 3 pips on its right end. The third domino shown below is a  $[4, 4]$  domino, since there are 4 pips on its left end and 4 pips on its right end.



We can also rotate the domino tiles. The first domino shown below is a  $[5, 3]$  domino, since there are 5 pips on its left end and 3 pips on its right end.

However, since this tile can be obtained by rotating the  $[3, 5]$  tile,  $[5, 3]$  and  $[3, 5]$  represent the same domino. Similarly, the second domino shown below is a  $[3, 0]$  domino. Again, note that  $[3, 0]$  and  $[0, 3]$  represent the same domino.



A 2-set of dominoes contains all possible tiles with the number of pips on any end ranging from 0 to 2, with no two dominoes being the same. A 2-set of dominoes has the following six tiles:  $[0, 0]$ ,  $[0, 1]$ ,  $[0, 2]$ ,  $[1, 1]$ ,  $[1, 2]$ ,  $[2, 2]$ . Notice that the three dominoes  $[1, 0]$ ,  $[2, 0]$ , and  $[2, 1]$  are not listed because they are the same as the three dominoes  $[0, 1]$ ,  $[0, 2]$ , and  $[1, 2]$ .

Similarly, a 12-set of dominoes contains all possible tiles with the number of pips on any end ranging from 0 to 12, with no two dominoes being the same.

Domi purchased a 12-set of dominoes. How many tiles are in the set?