



## Problem of the Week

### Problem B

#### Squirrely Over Nuts

Squiggles the Squirrel loves nuts. He has to be sure that he has enough for the winter, so he decides to hide a bunch around his yard. He buries them in a special way so that he will be able to find them. A portion of his yard is shown as a grid below.



In hiding the nuts, he uses the following plan. Starting at  $X$  he buries 2 nuts. He will then repeat the following three steps.

1. He moves 2 m north, 3 m east, and 1 m south, and then buries 3 nuts.
2. He moves 3 m north, 3 m east, and 2 m south, and then buries 5 nuts.
3. He moves 4 m north, 3 m east, and 3 m south, and then buries 8 nuts.

- a) On the grid below, mark the positions of Squiggles' first four hiding spots. Assume each grid line measures 1 m.
- b) Suppose that Squiggles then repeats the three steps, starting from where he last buried nuts. Mark these next three hiding spots on your grid.
- c) Suppose Squiggles repeats the three steps four more times. Use the pattern in the number of buried nuts to find how many nuts will he have hidden in total.

EXTENSION: Examine the points on your grid from part b). Describe how Squiggles could reach his hiding spots with the least amount of running around.

