Problem of the Week
Problem B
Wrecked Tangles

Gaby drew a rectangle and called it *Diagram 1*.

She then drew a rectangle divided into two equal parts, and called *Diagram 2*.

She then counted the total number of rectangles in *Diagram 2*. There is 1 rectangle on the left, 1 rectangle on the right, and the original whole rectangle, which makes 3 rectangles in total.

Gaby then drew a rectangle divided into three equal parts, called *Diagram 3*.

Gaby counted a total of 6 rectangles in *Diagram 3*. Can you confirm this?

(a) Gaby continued drawing diagrams by dividing a rectangle into equal parts. *Diagram 4* is divided into four equal parts, *Diagram 5* is divided into five equal parts, and so on. Complete the table by determining the total number of rectangles in each diagram. Draw the diagrams to help you, and then look for a pattern in the total number of rectangles.

Diagram Number	Total Number of Rectangles
1	1
2	3
3	6
4	
5	
6	

(b) Use the pattern you found in part (a) to predict the total number of rectangles in *Diagram 12*.

THEMES   ALGEBRA, GEOMETRY & MEASUREMENT