Patchwork

A sheet of square dot paper is provided for use with this item.

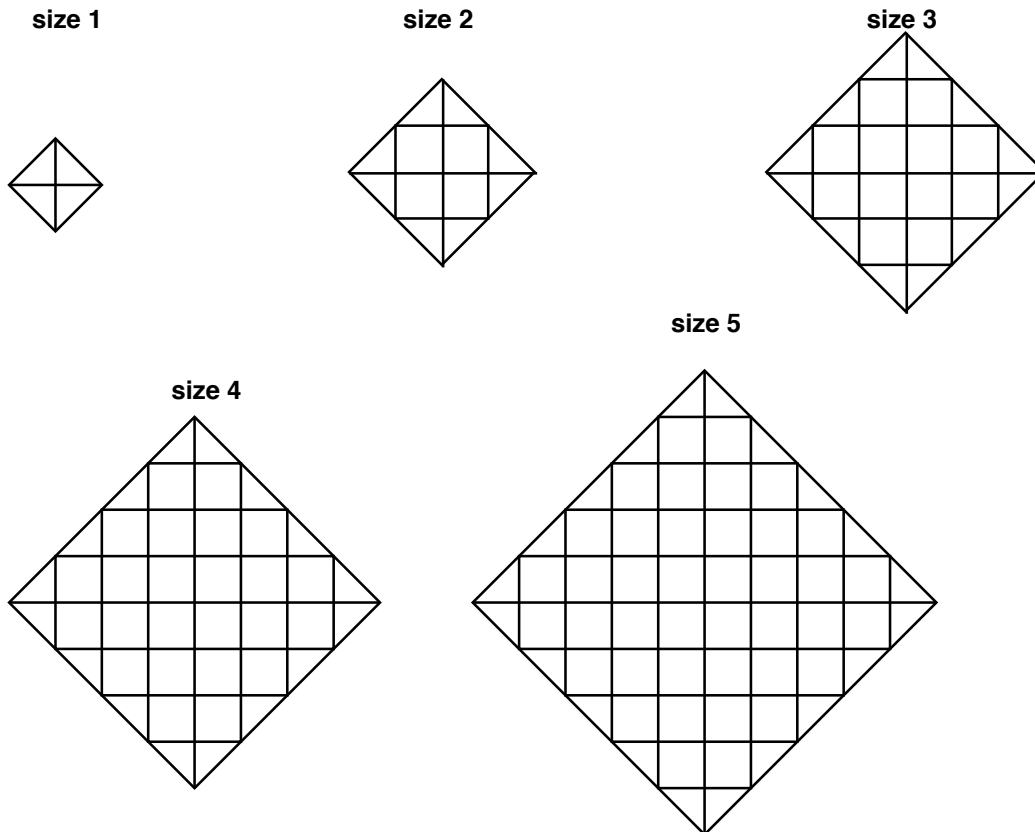Kate makes patchwork cushions.
She uses right triangles and squares.

She uses triangles along the edges of each cushion. The rest is made from squares.

The backs of the cushions are made of plain material, not patchwork.

Here are the first five sizes of patchwork cushions.

size 1   **size 2**   **size 3**

size 4   **size 5**

Kate makes cushions in many other different sizes.

She begins to figure out how many triangles and squares she needs for each size.

For size 1, she needs 4 triangles and 0 squares.

For size 2, she needs 8 triangles and 4 squares.

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1. Complete this table to show how many triangles and squares she needs for each of these five sizes?

Size *(n)*	Number of triangles *(t)*	Number of squares *(s)*
1		
2		
3		
4		
5		

2. Find a rule, or a formula, that will help Kate figure out the number of triangles that she needs for cushions of different sizes. Explain how you figured it out.

_____

_____

_____

_____

_____

3. Use the number patterns in the table to find a rule, or a formula, that will help Kate figure out the number of squares she needs for cushions of different sizes. Explain why your rule works.

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4. Kate has a cushion made with 180 squares.
   How many triangles are in this cushion?   _____
   Show how you found the number of triangles.

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