14. An equilateral triangle of side length 4 cm is divided into smaller equilateral triangles, all of which have side length equal to a whole number of centimetres. Which of the following cannot be the number of smaller triangles obtained?

A 4 B 8 C 12 D 13 E 16

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14. C Let us define T_n to represent an equilateral triangle with side length n cm. Then an equilateral triangle of side length 4 cm can be divided into smaller equilateral triangles as follows:

$1 \times T_3$ and $7 \times T_1$	$4 \times T_2$	$3 \times T_2$ and $4 \times T_1$
$2 \times T_2$ and $8 \times T_1$	$1 \times T_2$ and $12 \times T_1$	$16 \times T_1$.

The number of triangles used are: 8, 4, 7, 10, 13 and 16. So it is not possible to dissect the original triangle into 12 triangles.