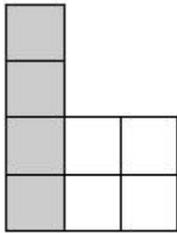


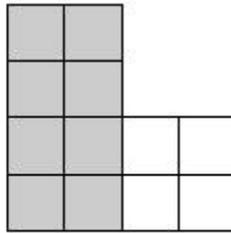
KS3

Tile patterns

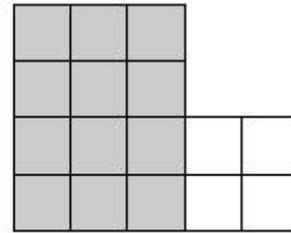
I make a sequence of shapes using grey and white tiles.



shape
number 1



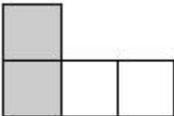
shape
number 2



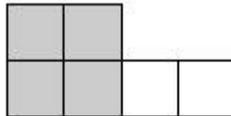
shape
number 3

The total number of tiles in shape number n is $4n + 4$

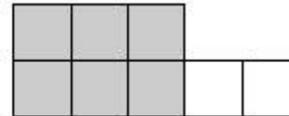
(a) I remove **half the tiles** to make the sequence of shapes below.



shape
number 1



shape
number 2



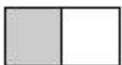
shape
number 3

Complete the sentence.

The total number of tiles in shape number n is

1 mark

(b) Then I remove **half the tiles** again.



shape
number 1



shape
number 2



shape
number 3

Complete the sentence.

The total number of tiles in shape number n is

1 mark

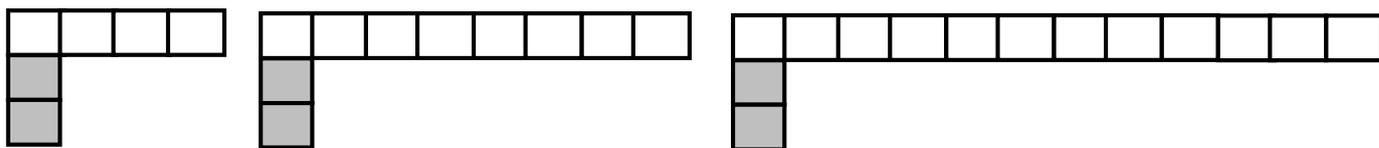
(a) The total number of tiles is half of $4n+4$

$$\text{so } \frac{4n+4}{2} = 2n+2$$

(b) The total number of tiles is half of $2n+2$

$$\text{so } \frac{2n+2}{2} = n+1$$

I make a sequence of shapes using grey and white tile.



The total number of tiles in shape number n is $4n + 2$

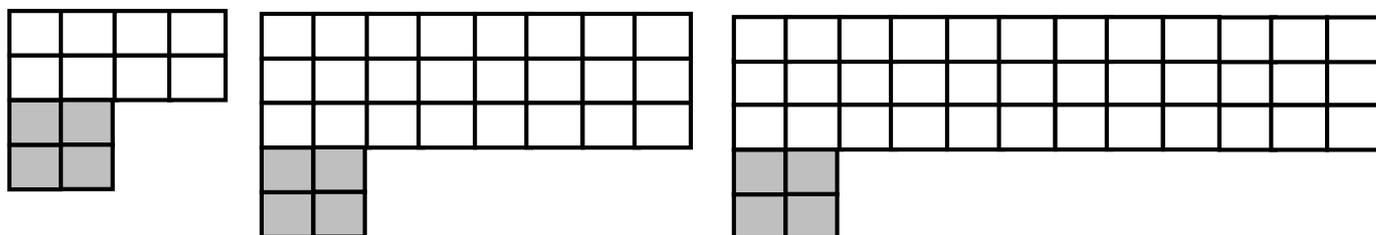
a. I remove half the tiles to make the sequence of shapes below.



Complete the sentence

The total number of tiles in shape number n is

b. Then I double the tiles in the original diagram to make the sequence below.



Complete the sentence

The total number of tiles in shape number n is

Answers:

a. $2n + 1$
b. $8n + 4$

