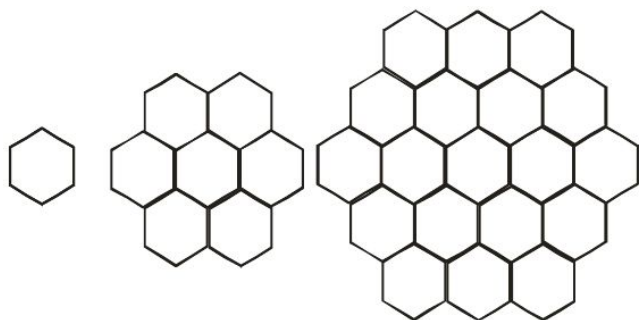


First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

**Problem 1**

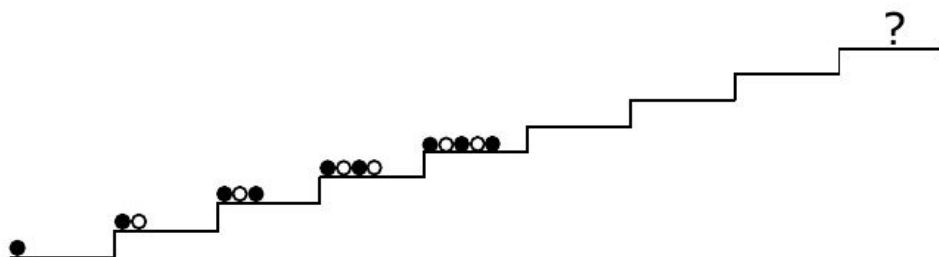
Sylvia drew figures with hexagons like in the picture. How many hexagons will the fifth figure contain, if she continues with this pattern?



- (A) 37      (B) 49      (C) 57      (D) 61      (E) 64

**Problem 2**

Sophie is arranging black and white marbles following the pattern shown in the picture.

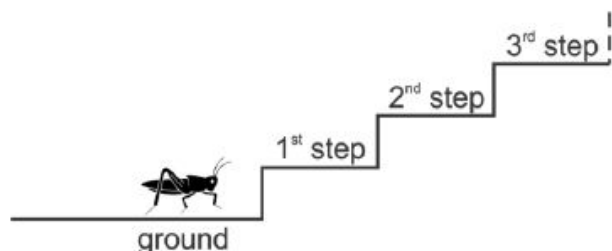


How will the marbles appear on the top level where the question mark located?

- (A) ●○○○○○○○      (B) ○●○○○○○●      (C) ●●●○○○○●  
 (D) ●○○○○○○○●      (E) ●●○○○○○○○●

**Problem 3**

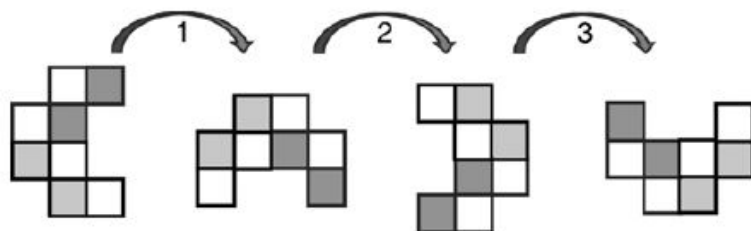
A grasshopper wants to climb a staircase with many steps. She can make only two kinds of jumps: three steps up, or four steps down. Beginning at the ground level, at least how many jumps will she have to make in order to take a rest on the 22 th step?



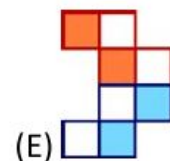
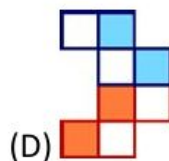
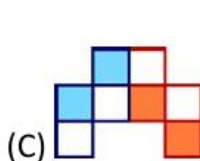
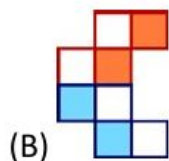
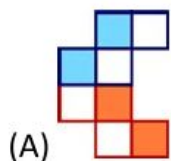
- (A) 7      (B) 9      (C) 10      (D) 12      (E) 15

#### Problem 4

Alfred turns his building block 10 times. The first three times can be seen in the picture.



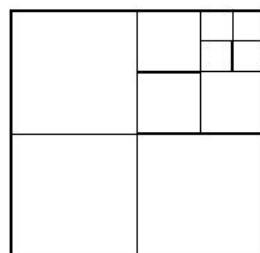
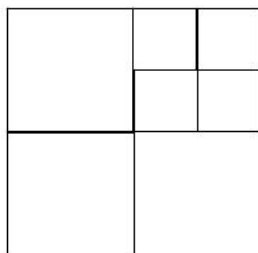
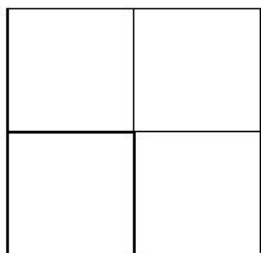
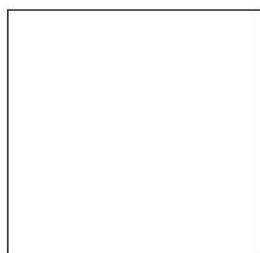
What is the final position of the building block?



#### Problem 5

We make a sequence of figures with tiles. The first four figures have 1, 4, 7 and 10 tiles, respectively. How many tiles will the fifth figure have?

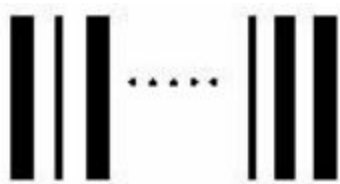
- A) 11      B) 12      C) 13      D) 14      E) 15



First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

**Problem 1**

A pattern, the beginning and the end of which is shown in the picture, is made up of alternating black and white bars. There are 17 bars altogether. The bars on both ends are black. How many white bars are there in the pattern?

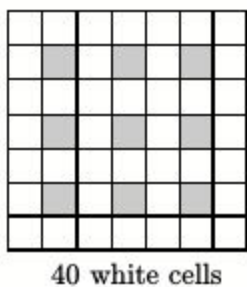
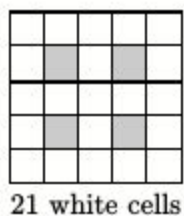
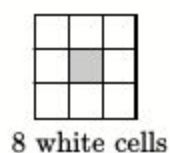


- A) 9      B) 16      C) 7      D) 8      E) 15

**Problem 2**

Zosia is drawing kangaroos. The first one is blue, the next one green, followed by red, and finally yellow, and then again blue, green, red, yellow, and so on, in the same order. What color will the seventeenth kangaroo be?

- A) Blue      B) Green      C) Red      D) Black      E) Yellow

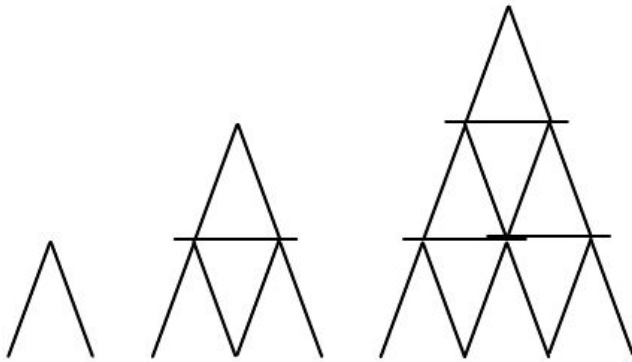
**Problem 3**

Cells. We count the number of white cells. How many white cells has the next square?

- A) 50      B) 60      C) 65      D) 70      E) 75

**Problem 4**

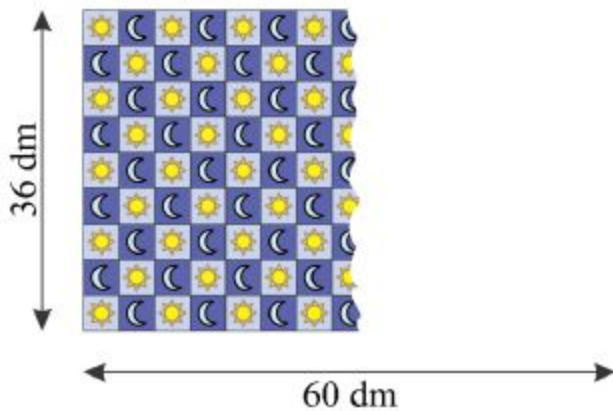
Johnny builds a house made out of cards. In the picture, one-floor, two-floor, and three-floor such houses are shown. How many cards does Johnny need to build 4-floor house?



- A) 23      B) 24      C) 25      D) 26      E) 27

**Problem 5**

Peter bought a carpet 36 dm wide and 60 dm long. The figure shows part of this carpet. As seen, the carpet has a pattern of small squares containing either a sun or a moon. You can count that along the width there are nine squares. When the carpet is fully unrolled, how many moons will be seen?



- (A) 68      (B) 67      (C) 65      (D) 63      (E) 60

Problem Set

**Problem 1 (3-4\_2011\_24)**

**Problem 2 (1-2\_2016\_9)**

**Problem 3 (3-4\_2012\_20)**

**Problem 4 (1-2\_2017\_7)**

**Problem 5 (3-4\_2008\_3)**

Homework

**Problem 1 (3-4\_2003\_11)**

**Problem 2 (3-4\_2003\_4)**

**Problem 3 (3-4\_2007\_20)**

**Problem 4 (3-4\_2006\_18)**

**Problem 5 (3-4\_2013\_23)**