

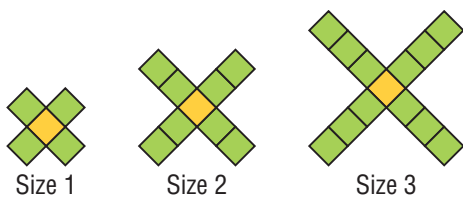
## Practice

### Check

4. In each equation, determine the value of  $P$  when  $n = 1$ .  
 a)  $P = 2n$    b)  $P = 3n$    c)  $P = 4n$    d)  $P = 5n$
5. In each equation, determine the value of  $A$  when  $n = 2$ .  
 a)  $A = 3n + 1$                       b)  $A = 3n + 2$   
 c)  $A = 3n + 3$                       d)  $A = 3n + 4$
6. In a table of values for a pattern,  $P = 3$  when  $n = 1$ ; which of the following equations might represent the pattern?  
 a)  $P = 3n$                               b)  $P = n + 3$   
 c)  $P = 2n + 1$                       d)  $P = 3 - n$
7. The pattern in this table continues. Which expression below represents the number of squares in terms of the figure number?

Figure, $f$	Number of Squares, $s$
1	6
2	7
3	8
4	9
5	10

- a)  $5f$                       b)  $2f$                       c)  $f + 5$                       d)  $s + 5$
8. This pattern of squares continues. Which equation below relates the number of squares,  $n$ , in a picture to the size number,  $s$ ?



- a)  $n = s + 4$                       b)  $n = 4s$   
 c)  $n = 4s + 1$                       d)  $s = 4n$

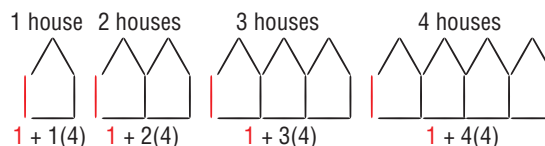
9. The pattern in this table continues. Which equation below relates the number of squares to the figure number?

Figure, $f$	Number of Squares, $s$
1	5
2	7
3	9
4	11
5	13

- a)  $s = 4f + 1$                       b)  $s = 2f + 3$   
 c)  $s = f + 2$                       d)  $f = 2s + 3$
10. Here is a pattern made with toothpicks. The pattern continues.



Here are the toothpicks rearranged to show what stays the same and what changes in each picture.



- a) Explain how the numbers in the expression below each picture describe the arrangement of toothpicks in the picture.  
 b) Let  $n$  represent the number of houses in a picture. Write an expression for the number of toothpicks in  $n$  houses.  
 c) Write an equation that relates the number of toothpicks,  $t$ , to  $n$ .  
 d) Verify the equation by showing that it produces the correct number of toothpicks for the first four pictures in the pattern.