

1. The image below shows a pattern of sections from a fence made from boards.

a. Sketch the next two sections of the fence:



b. Complete the following chart:

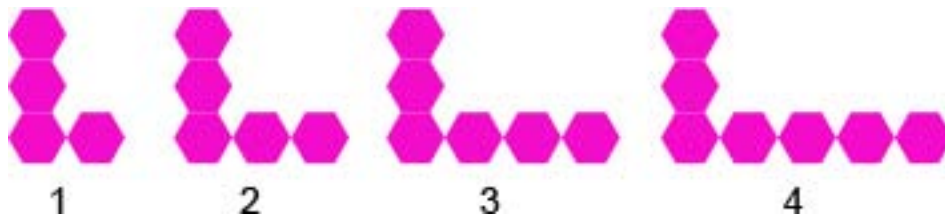
Fence # (variable)	# of boards
1	4
2	7
3	
4	
5	

c. How many boards are added for each new section? \_\_\_\_\_ .

d. If the same number of boards has been added to each fence section, how many boards would 'fence zero' theoretically have? \_\_\_\_\_ This number will be the constant.

e. If "x" is used to represent the fence #, the equation can be represented by: \_\_\_\_\_

2.



a. Complete the table on the right for the pattern shown above

b. Every time the figure number increases by one the number of hexagons increases by \_\_\_\_\_

c. How many hexagons would be in the 'zero' figure? \_\_\_\_\_.

d. Write the expression that represents the relationship between the figure number and the number of hexagons.

Figure # (variable)	# of hexagons
1	4
2	5
3	
4	
5	

3. Draw the next two figures in this toothpick pattern:

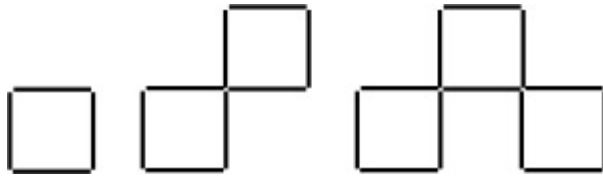
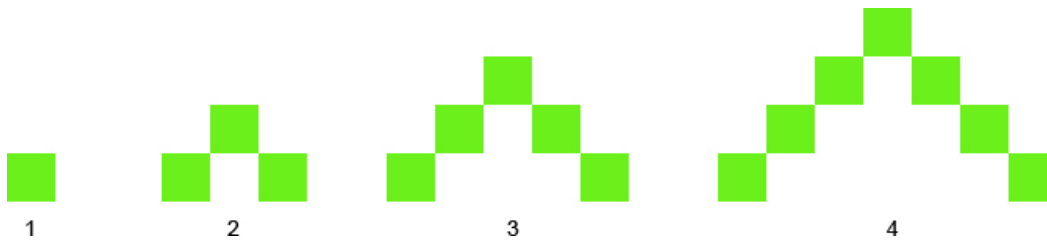


Figure	Number of toothpicks
1	4
2	8
3	12
4	
5	
10	

Write an expression for the relationship between the figure number and the number of toothpicks:

\_\_\_\_\_

4.



Write an expression for the relationship between the figure and the number of squares:

\_\_\_\_\_

5. Complete the pattern in this table:

<b>x</b>	1	2	3	4	5	6
<b>y</b>	4	8	12			

Which expression represents this pattern?

a.  $x + 4 = y$

b.  $4 + 4 = y$

c.  $4x = y$

d.  $y = x + 1$

6. Complete the pattern in this table:

<b>x</b>	3	5	7	9	11	13
<b>y</b>	8	10	12			

Circle the expression represents this pattern?

$2x = y$

$2x + 2 = y$

$2x - 2 = y$

$x + 5 = y$

7. Create an expression from the following table of values:

Term	Number
1	2
2	3
3	4
4	5
5	6

a. How much does the number increase for each term (variable)? \_\_\_\_\_

b. What would the number be at the "0 term" (constant)? \_\_\_\_\_

c. What expression would represent the pattern? \_\_\_\_\_

8. Create an expression from the following table of values:

Term	Number
1	1
2	3
3	5
4	7
5	9

1. What equation would represent the pattern? \_\_\_\_\_

2. Verify the equation by substituting values from the table.

9. Discover the relationship between x and y in each table below by completing the table then write the relationship between x and y as an equation. **The first one has been done for you.**

x	y
2	20
4	40
6	60
8	80
10	100
12	120

Equation:

$y = 10x$

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x	y
5	8
6	9
7	10
8	11
9	
10	

x	y
15	10
16	11
17	12
18	
19	
20	

x	y
5	11
10	21
15	31
20	
25	
30	

Number of Tickets	Cost
1	6
2	12
3	18
4	
5	
6	

Equation:

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Hours worked	Salary (\$)
5	42.50
10	85.00
15	127.50
20	
25	
30	

Distance (k)	Time (hr)
100	2
150	3
200	4
250	
300	
350	

Boxes Sold	Profit
10	5.00
11	5.50
12	6.00
13	
14	
15	