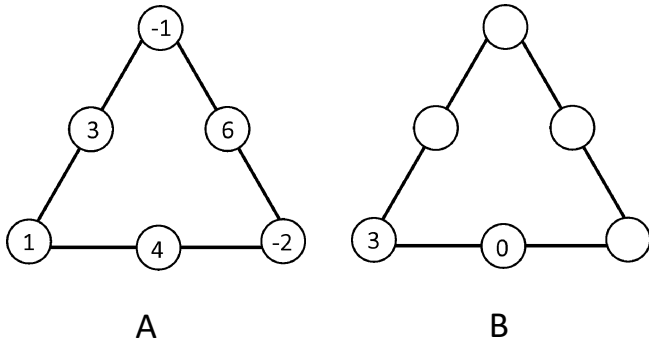


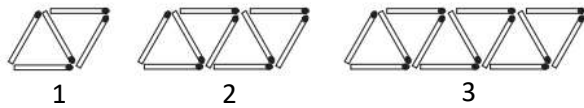
The use of numbers and patterns often requires using what you know and some logic to figure it out. See how well you can use your logic to answer the questions that follow.

1. a) In the magic triangle A, what number does each side add up to? \_\_\_\_\_
- b) In the magic triangle B, write the numbers 1, 2, -1, -2 in each circle so that all sides add up to the same number.



2. Brandon needs to remember his new 4-digit code to unlock his cell phone. He used the digits in his birthday – July 5, 92 and remembers the last digit was 9. Complete the table to show all the possible combinations of digits he could use.

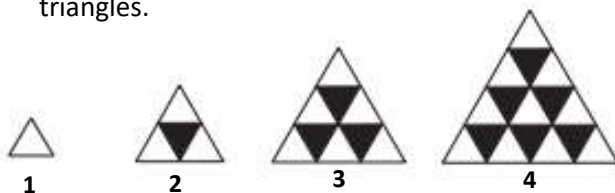

3. The pattern below is made using matchsticks. Try to figure out an association between the number of matchsticks and triangles formed.



Pattern Number	1	2	3	4	5	
Match Sticks						53
Triangles						

- a) Complete the table for Patterns 1-5
- b) Which pattern number would have 53 matchsticks? \_\_\_\_\_
- c) How many triangles would 53 matchsticks produce? \_\_\_\_\_

4. The pattern below is formed using white and black triangles. Figure out an association between the triangles.



Pattern Number	1	2	3	4	5	10
White Triangles						
Black Triangles						
Total Triangles						

- a) Complete the table
- b) Determine a rule or formula to calculate the number of white triangles \_\_\_\_\_
- c) What *type of numbers* are there in the 'Total Triangles' row above? \_\_\_\_\_