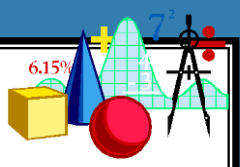
Investigation: **Guess the Polynomial**



Algebraic functions of various degrees have certain recognizable family traits. For example:

Y = 6x +3	X	1	2	3	4	5
	Y	9	15	21	27	33
	Difference of values	6	6	6	6	
$Y = x^2$ 6x +3	X	1	2	3	4	5
	Y	10	19	30	43	58
	Difference of values	9	11	13	15	
	Difference of values	2	2	2		
$Y = x^2$ 6x +3	X	1	2	3	4	5
	Y	9	24	57	114	201
	Difference of values	15	33	57	87	
	Difference of values	18	24	30		
	Difference of values	6	6			

Using the generalized form of each of these equations, examine these patterns more thoroughly:

y=ax + b	X	1	2	3	4	5
$y=ax^2 + bx + c$	X	1	2	3	4	5
$y=ax^3 + bx^2 + cx + d$	X	1	2	3	4	5

Investigation: **Guess the Polynomial** **(Continued)**

Now find the equations for the following functions. Report and turn the results in to your teacher.

1.	X	1	2	3	4	5	6
	Y	2	11	32	71	134	227
2.	X	1	2	3	4	5	6
	Y	1	3	13	31	57	91
3.	X	1	2	3	4	5	6
	Y	-3	-7	11	99	329	797