**Finite Difference**

* If the first differences are the same, then a sequence has a linear model $a\_{n}=xn+y$
* If the second differences are the same, a sequence has a quadratic model $a\_{n}=xn^{2}+yn+z$

Ex. Use matrices to find the equation that models the sequence $0, 3, 6, 9, …$ Assume *n* begins with 1.

Ex. Use matrices to find the equation that models the sequence $0, 4, 10, 18, 28, … $ Assume *n* begins with 1.

Ex. Use matrices to find the equation that models the sequence $17, 21, 25, 29, …$ Assume *n* begins with 1.

Ex. Use matrices to find the equation that models the sequence$ -2, 1, 6, 13, 22 …$ Assume *n* begins with 1.