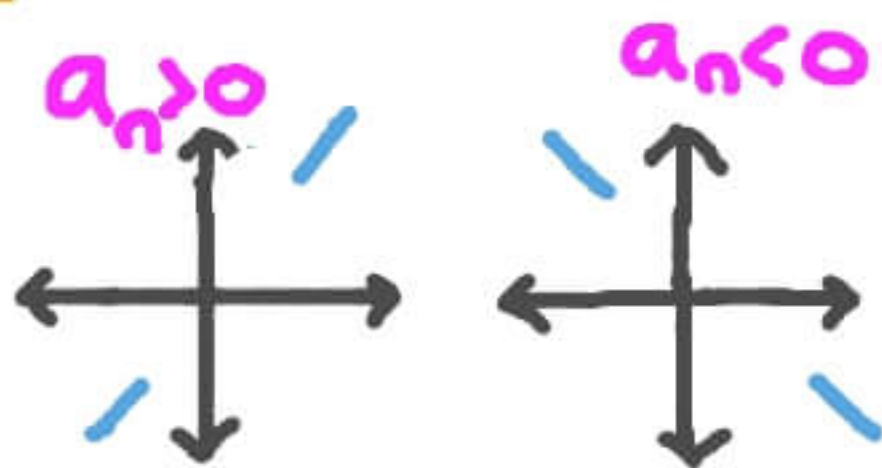


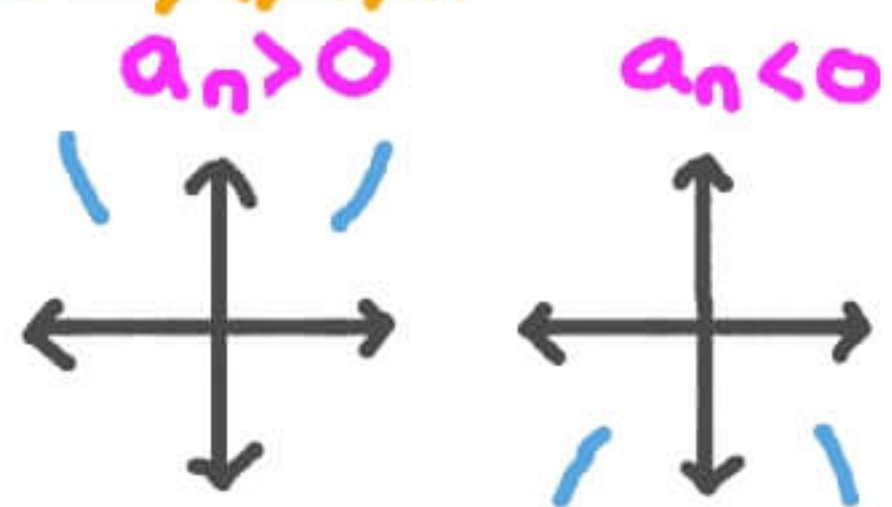
$$y = a_n x^n + \dots + a_0 = f(x)$$

$n=1$

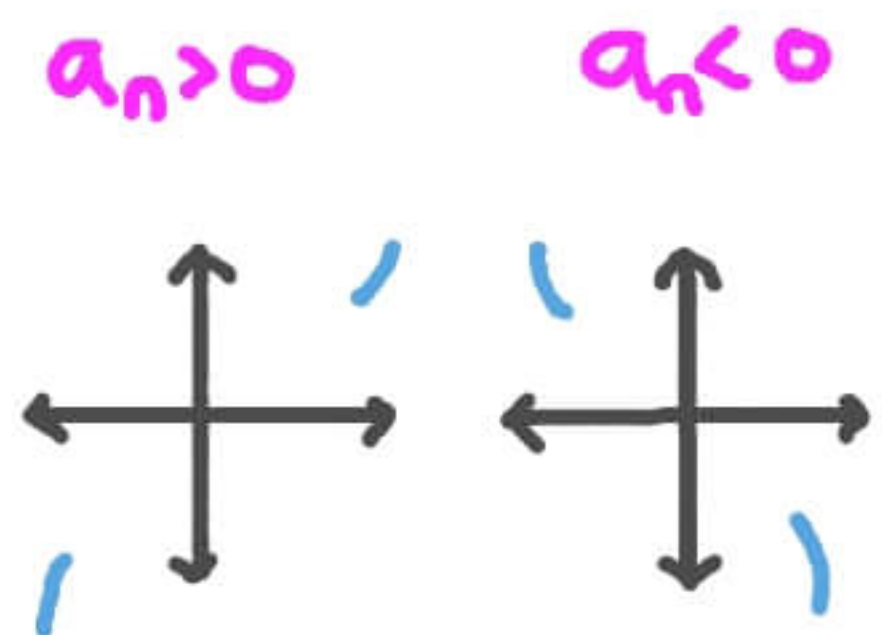


End behavior

$n=2, 4, 6, \dots$



$n=3, 5, 7, \dots$



GRAPHS OF POLYNOMIAL FUNCTIONS

- 1) Find y-intercept $\leftarrow f(0) = a_0$
- 2) End behavior
- 3) Factor for x-intercepts
- 4) Shape at x-intercepts

multiplicity of factor

- 1) Substitute $x=0$
- 2) look at leading coefficient, is it positive or negative?
look at exponent of leading term, is it odd or even?
- 3) $f(b)=0$, means b is x-intercept
- 4) $(x-b)^k$, k tells us shape near b