

Polynomial Terminology and Translations of Quadratics

- y-intercept: same as yesterday. How to find it quickly?
- degree: highest exponent

$$f(x) = 3x^2 - 2x + 5$$

$$f(0) = 3(0)^2 - 2(0) + 5$$

$$f(0) = 5$$

$$(0, 5)$$

$$f(x) = 2x^2 - 5x - 1$$

2nd degree → quadratics

- leading term: first term when written in descending order

$$f(x) = 5 - 2x^2 + 3x$$

$$= -2x^2 + 3x + 5$$

↑ leading term: $-2x^2$

- leading coefficient: the coefficient of the leading term

--- if leading term is $-2x^2$

leading coefficient → -2

★ Finding a y-intercept: set $x=0$

$$f(x) = -2x^2 + 4x - 7$$

$$f(0) = -2(0)^2 + 4(0) - 7$$

$$f(0) = -7$$

$$(0, -7)$$

★ Translations of Quadratics / Parabolas

$$f(x) = (x-h)^2 + k$$

left or right

up or down

$$f(x) = (x-2)^2 + 6$$

↑ right
2

↑ up
6

$$f(x) = (x+3)^2 - 1$$

↑ left
3

↑ down
1