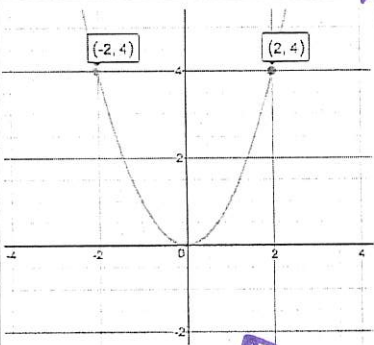
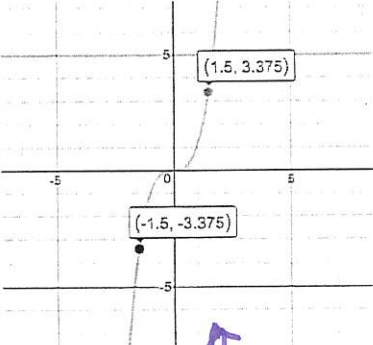


Even Functions	Odd Functions
Determine if the function is even by checking algebraically if the following is true: $f(-x) = f(x)$	Determine if the function is odd by checking algebraically if the following is true: $f(-x) = -f(x)$
To check if it is even graphically: Symmetry over the y-axis.  Even! ↑	To check if it is odd graphically: Rotational Symmetry around the origin  ODD ↑

Determine algebraically if the function is even, odd, or neither.

$$f(x) = x^3 + x$$

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

$$f(-x) = -x^3 - x \quad (\text{NOT EVEN})$$

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

$$-f(x) = -x^3 - x$$

ODD because  $f(-x) = -f(x)$

Determine algebraically if the function is even, odd, or neither.

$$h(x) = 3x^4 + 2x^3$$

$$h(-x) = 3(-x)^4 + 2(-x)^3$$

$$h(-x) = 3x^4 - 2x^3 \quad (\text{NOT EVEN})$$

$$-h(x) = -(3x^4 + 2x^3)$$

$$-h(x) = -3x^4 - 2x^3$$

Neither!