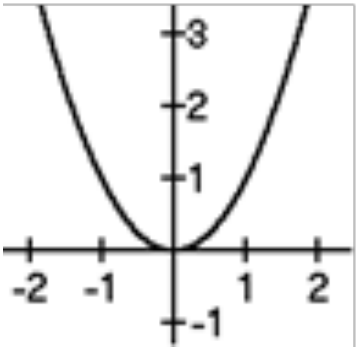
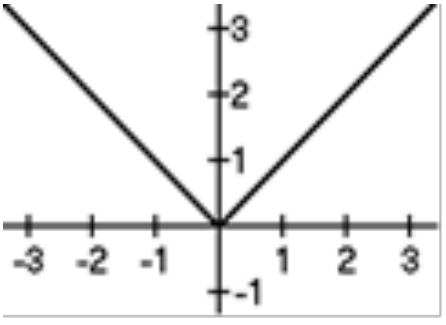
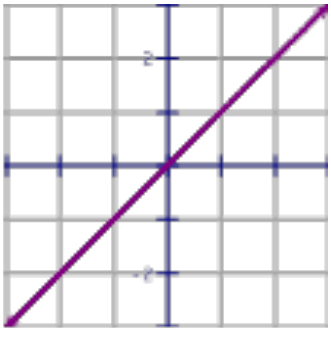
Write the parent function:



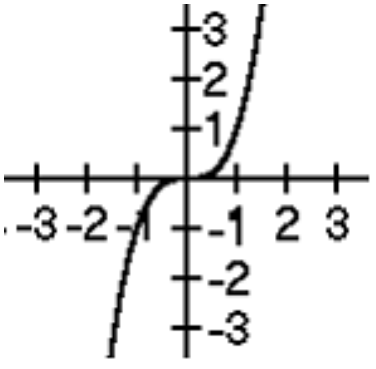
Write the parent function:



Write the parent function:



Write the parent function:



List the transformations:

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

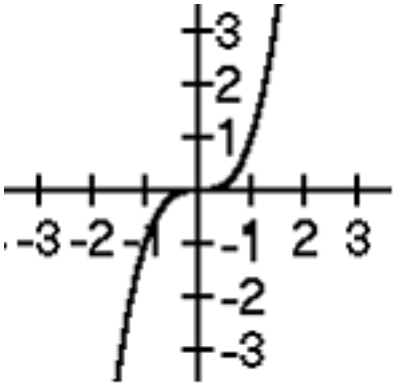
List the transformations:

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

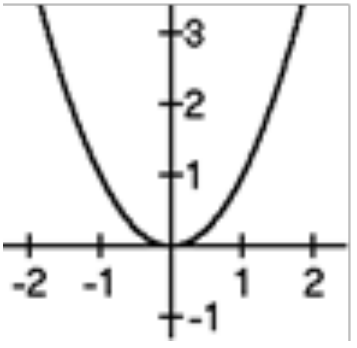
List the transformations:

$$f(x) = 4\sqrt[3]{x} + 2$$

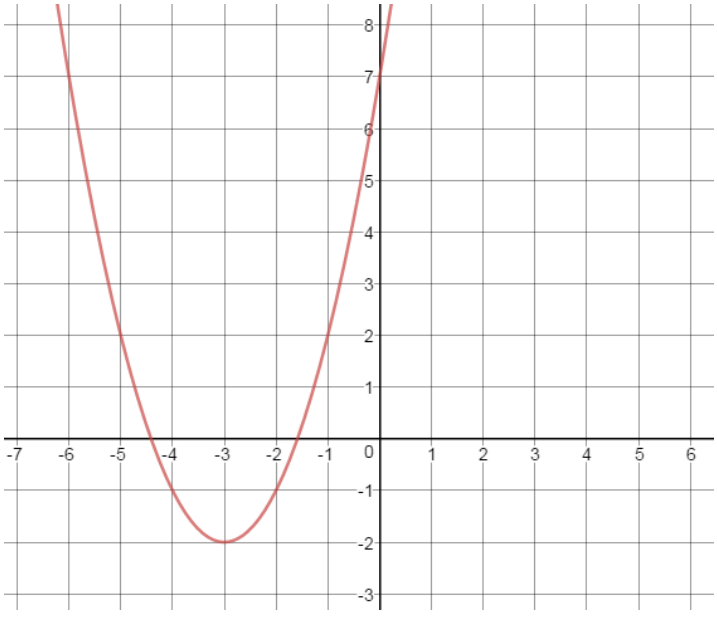
State where the function is **increasing**



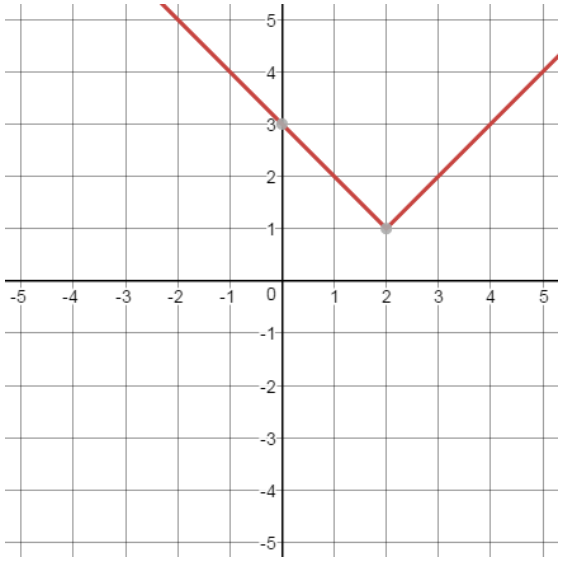
State where the function is **decreasing**



State where the function is **increasing**



State where the function is **decreasing**



State the **x-intercept**

$$g(x) = \sqrt{x+1} - 2$$

State the **y-intercept**

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

Perform the operation and write in standard form

$$\left(82x^8 + 21x^2 - 6\right) + \left(18x + 7x^8 - 42x^2 + 3\right)$$

Perform the operation and write in standard form

$$\left(-2x + 23x^5 + 11\right) - \left(5 - 9x^3 + x\right)$$

Perform the operation and write in standard form

$$\left(10x^2 - x + 4\right) - \left(5x + 7\right) + \left(6x - 11\right)$$

Perform the operation and write in standard form

Perform the operation and write in standard form

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

Perform the operation and write in standard form

$$(x^4 + 3x^3 - 7x + 5) \div (x^2 - 2)$$

Perform the operation and write in standard form

$$(x^4 - 7x^2 + 3x - 10) \div (x - 3)$$

Factor

$$x^2 + 5x - 14$$

Factor

$$3x^2 - 10x - 8$$

Factor

$$2x^2 + x - 6$$

Factor

$$2x^2 - 18$$

Factor

$$2x^3 - 6x^2 - 8x + 24$$

Factor

$$8x^3 - 125$$

Factor

$$x^3 + 64$$

Find the zeros and the multiplicities:

$$f(x) = (x-5)^2(x+3)^5(x+7)$$

Find the zeros and the multiplicities:

$$f(x) = -x^3(x+4)^4$$

Determine the End Behavior

$$f(x) = -3x^4 + 2x^3 + 6x - 4$$

Determine the End Behavior

$$f(x) = x^3 + 2x^2 - 7x - 13$$

Determine the End Behavior

$$f(x) = (x-1)^2(x+2)(x+4)$$

Determine the End Behavior

$$f(x) = -x^3(x+4)^4$$

Determine the End Behavior

$$f(x) = -x(x+2)^2(x-5)^2(x-7)$$

Determine the **zeros** and **type of intersection** for each zero.

$$f(x) = -x(x+2)^2(x-5)^2(x-7)$$

Determine the **zeros** and **type of intersection** for each zero.

$$f(x) = (x-5)^2(x+3)^5(x+7)$$

Determine the **zeros** and **type of intersection** for each zero.

$$f(x) = -x^3(x+4)^4$$

Determine the **zeros** and **type of intersection** for each zero.

$$f(x) = (x-1)^2(x+2)(x+4)$$

Solve the inequality:

$$-(x+1)(x-3)^2 \geq 0$$

Solve the inequality:

$$(x-2)(x-5)^3(x+3)<0$$