

REVIEW

**Graphing Quadratic
Functions**

QUADRATIC FUNCTIONS

A quadratic function is a polynomial function in which the highest exponent (degree) of one of its terms is 2.

Quadratic functions

$$f(x) = x^2 - 10x + 4$$

$$f(x) = 5x^2 + 4$$

$$f(x) = \frac{1}{2}x^2 - 17x$$

$$f(x) = x^2$$

Not Quadratic functions

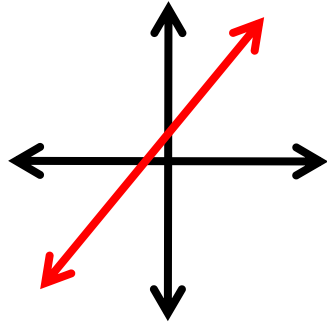
$$f(x) = x^3 - 8$$

$$f(x) = 4x + 7$$

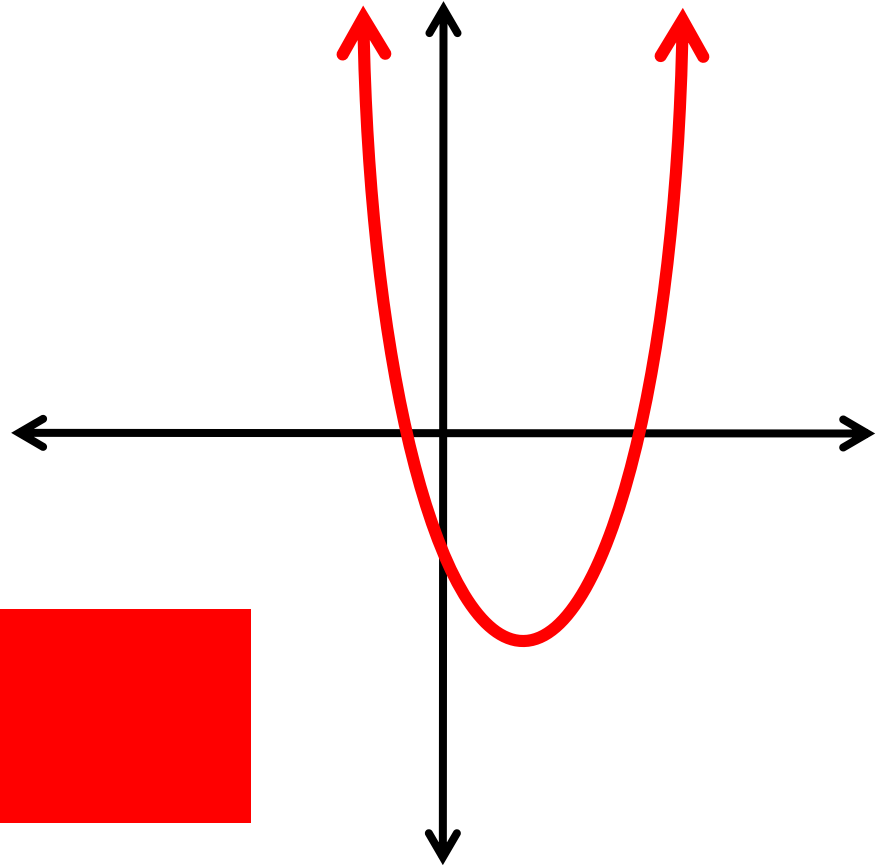
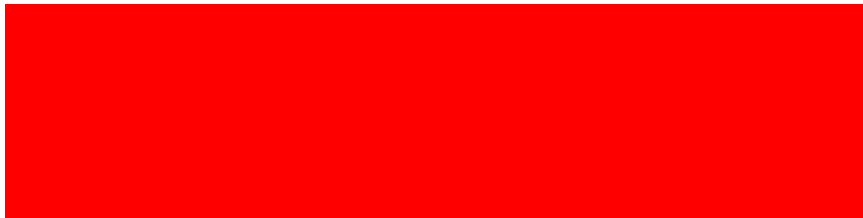
$$f(x) = 5x^5 - 17x^3$$

$$f(x) = \frac{2}{x}$$

THE GRAPHS OF QUADRATIC FUNCTIONS

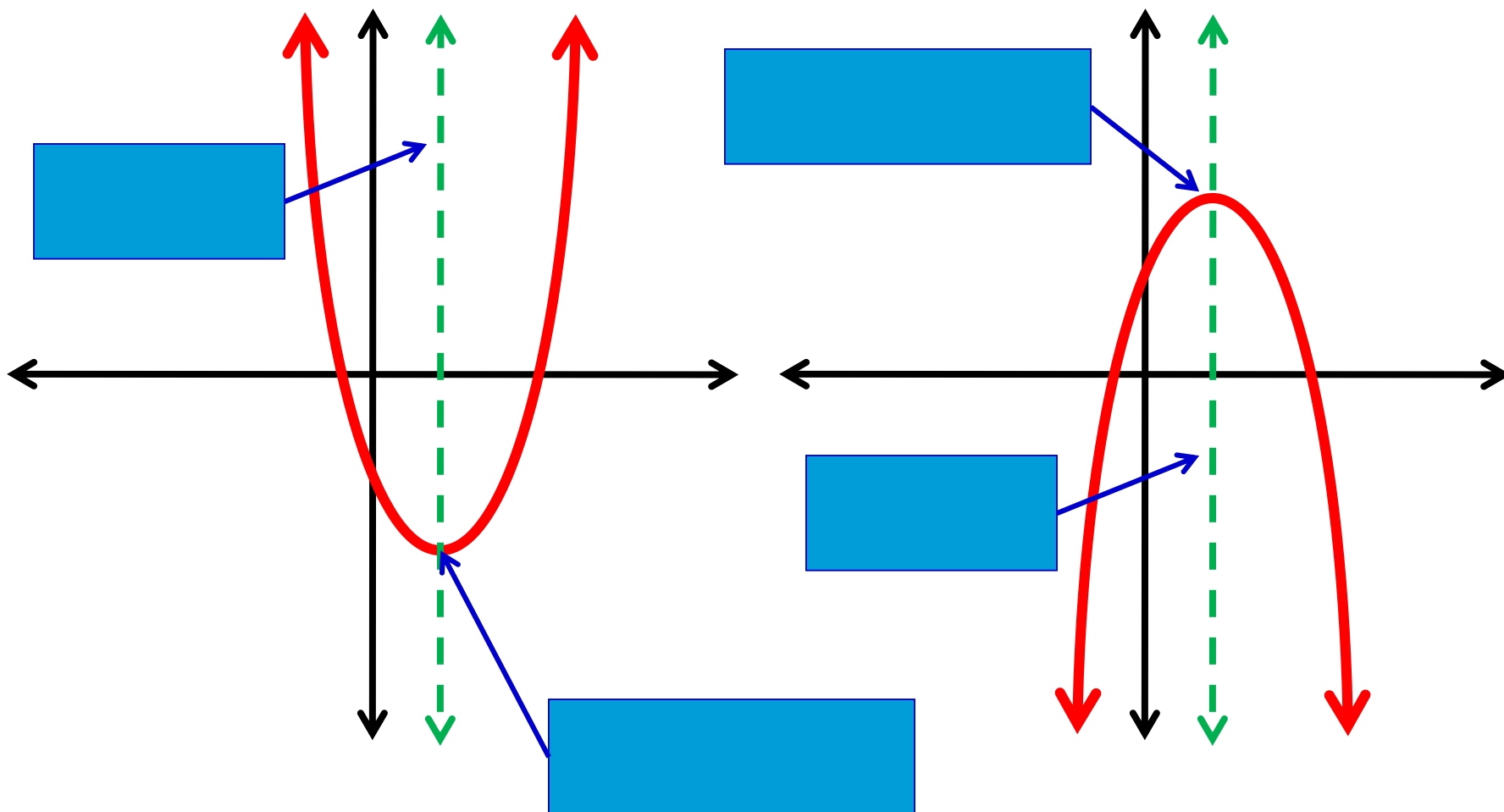


Linear Function
Graph

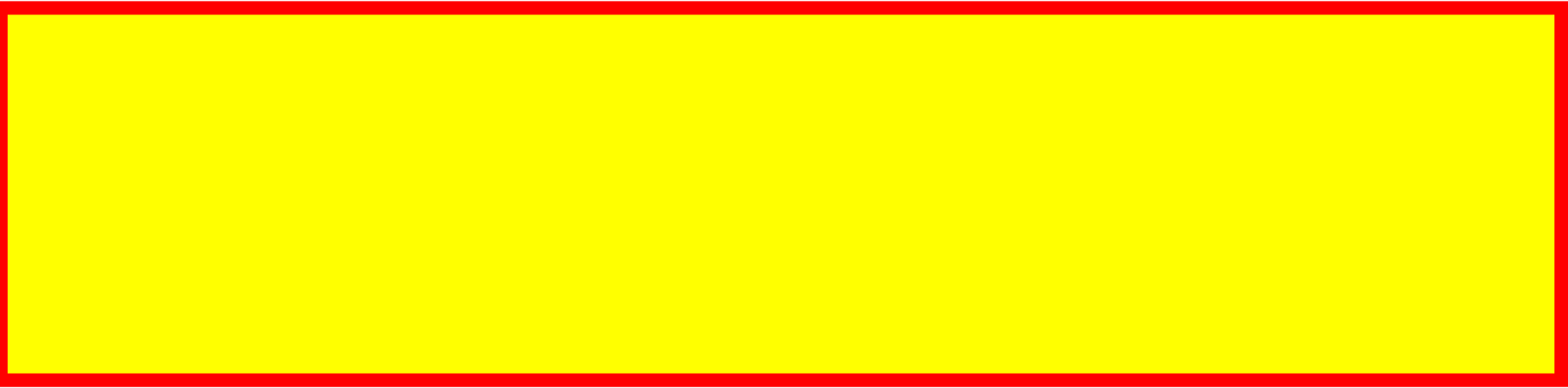


Quadratic
Function Graph

PARTS OF QUADRATIC FUNCTIONS



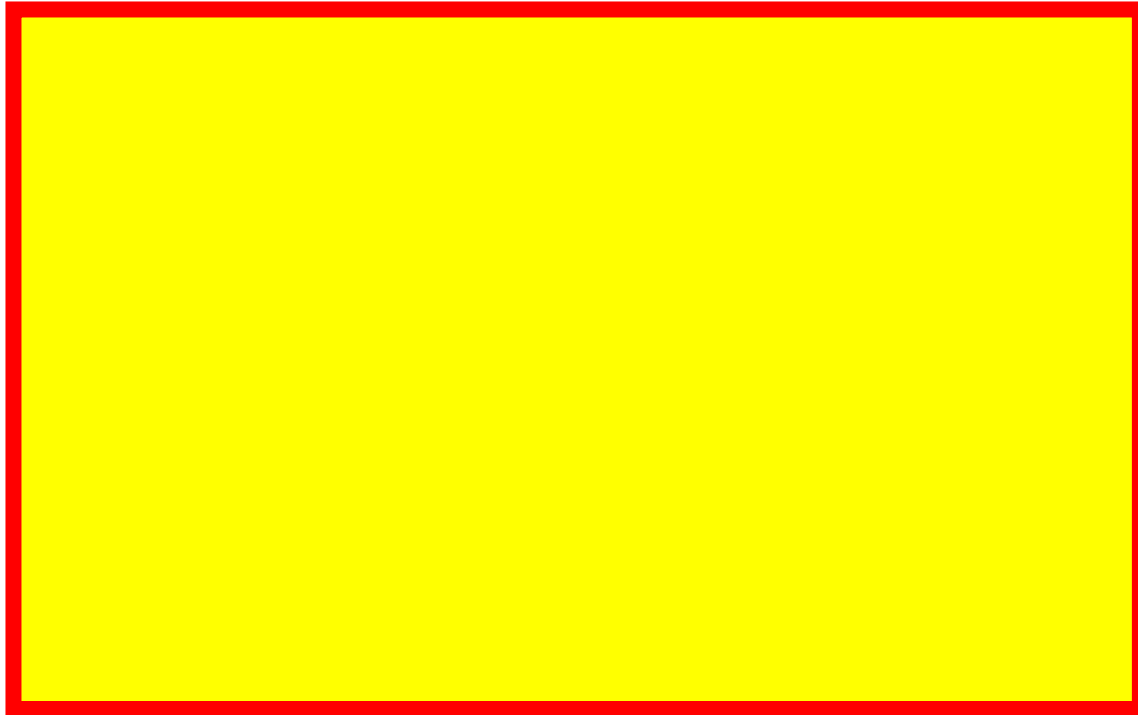
Quadratic Function Equation



If “a” is positive, the parabola opens _____.
If “a” is negative, the parabola opens _____.

X-coordinate of the vertex of a parabola

In a parabola, to figure the x-coordinate of the vertex, use the following:



This also gives you the equation for the axis of symmetry.

FINDING MINIMUMS AND MAXIMUMS

**WITHOUT GRAPHING, find the coordinates of the vertex.
Then give the equation of the axis of symmetry and the least
value of the function.**

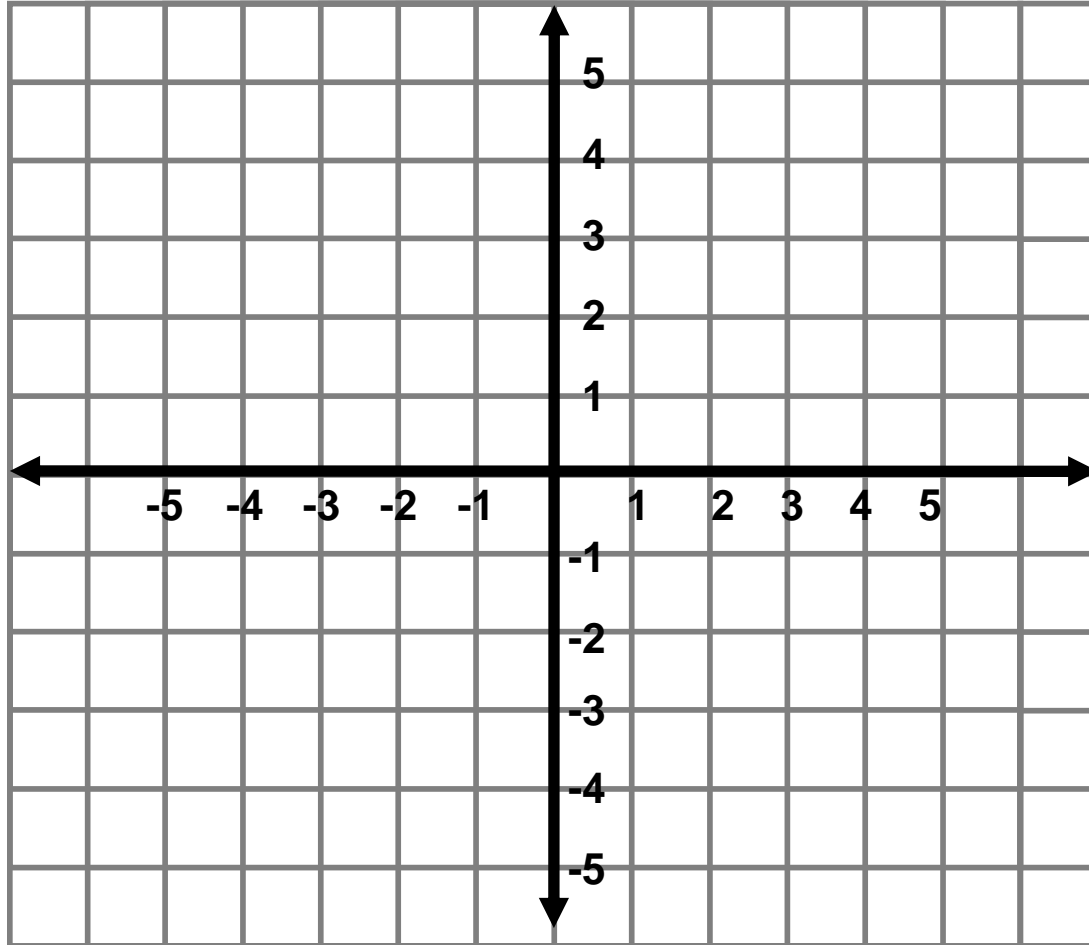
$$f(x) = 5x^2 - 10x + 4$$

FINDING MINIMUMS AND MAXIMUMS

**WITHOUT GRAPHING, find the coordinates of the vertex.
Then give the equation of the axis of symmetry and the
greatest value of the function.**

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

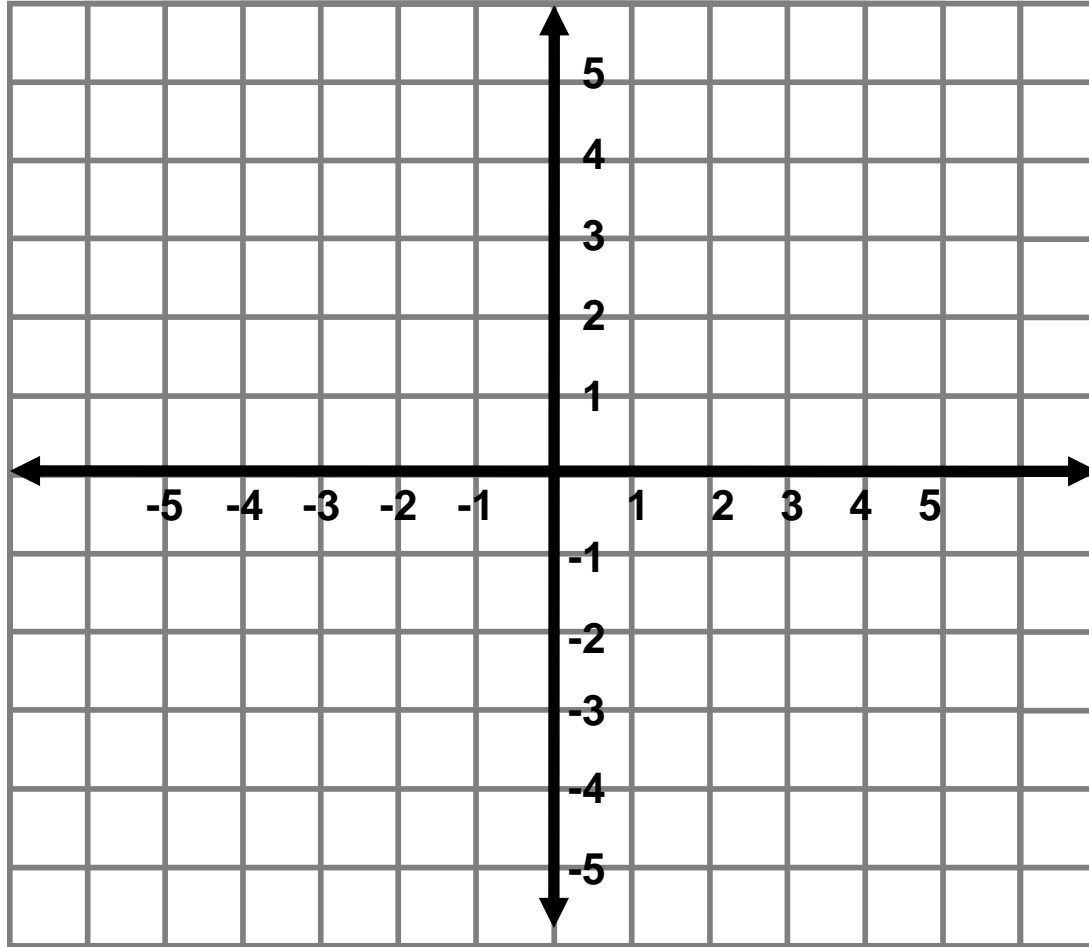
GRAPHING QUADRATIC FUNCTIONS



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

x	$f(x)$

GRAPHING QUADRATIC FUNCTIONS



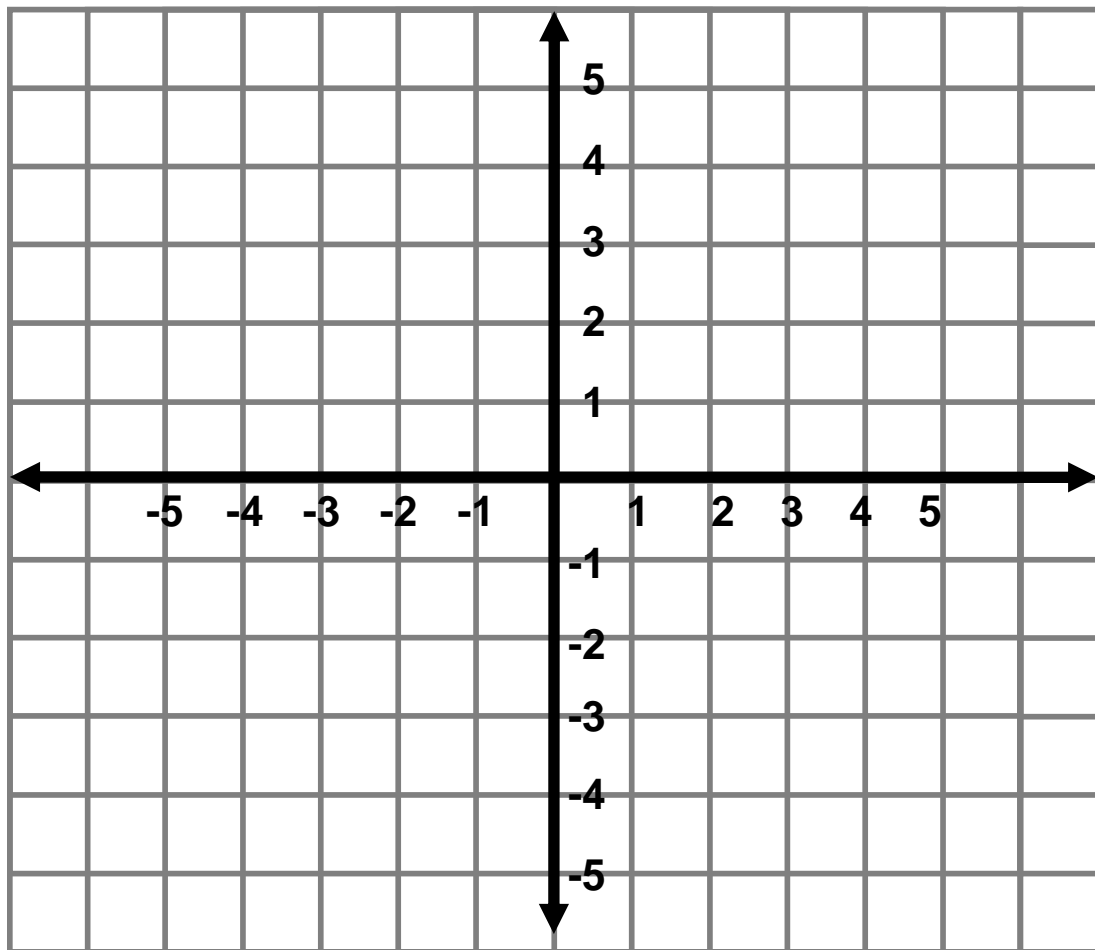
$$f(x) = -x^2 + 2x + 2$$

x	$f(x)$

GRAPHING QUADRATIC FUNCTIONS

Graph the following by **first finding the vertex** and four other points

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



x	$f(x)$