learn
TEACH. LEARN. HELP.
learnquebec.ca

Memory Aid

Solving a Quadratic Inequality One Variable

Quadratic Inequalities

Recognize

Inequality sign

① $-2(x-6)(x+2)>0$

② $x^2+5x-6\geq 0$

③ $-3(x+2)^2+12<0$

④ $(x-3)^2-1\leq 0$

There is one variable

The exponent of x is 2

Quadratic Inequalities

Find the solution set.
What are the solutions of the inequality?

1. Change the inequality sign to an equal sign.

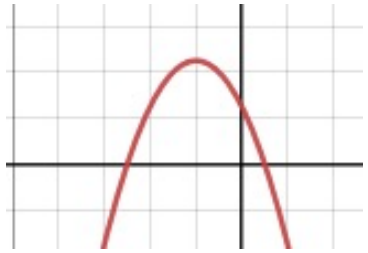
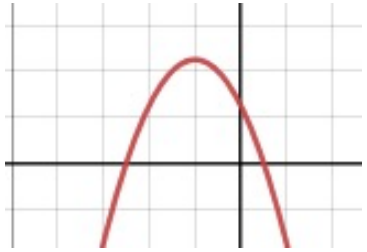
2. Solve the quadratic equation using the most appropriate method.

3. Sketch a graph showing the zeroes and the direction of the graph

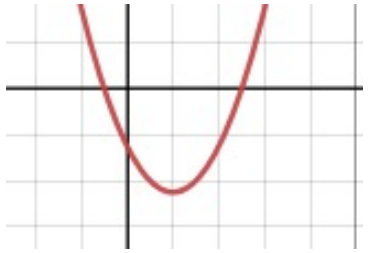
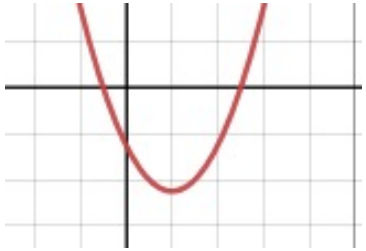
4. Convert to function form in order to determine the sign of the function.

5. Observe the inequality sign and follow the rules of when the function is positive or negative

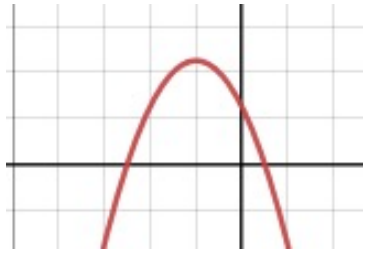
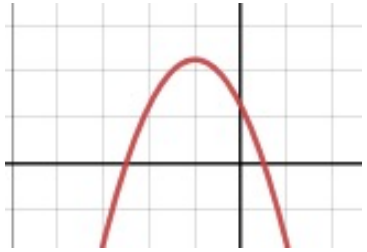
Quadratic Inequalities

Parameter a	Graph	Inequality sign	Solution Set x_1 and x_2 Represent the zeroes
$a < 0$		$>$	$]x_1, x_2[$
$a < 0$		$\geq$	$[x_1, x_2]$

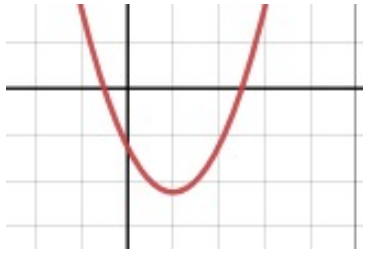
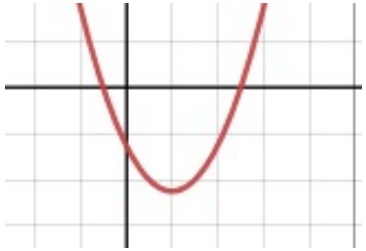
Quadratic Inequalities

Parameter a	Graph	Inequality sign	Solution Set x_1 and x_2 Represent the zeroes
$a > 0$		$>$	$]-\infty, x_1[\cup]x_2, \infty[$
$a > 0$		$\geq$	$]-\infty, x_1] \cup [x_2, \infty[$

Quadratic Inequalities

Parameter a	Graph	Inequality sign	Solution Set x_1 *and* x_2 Represent the zeroes
$a < 0$		$<$	$]-\infty, x_1[\cup]x_2, \infty[$
$a < 0$		$\leq$	$]-\infty, x_1] \cup [x_2, \infty[$

Quadratic Inequalities

Parameter a	Graph	Inequality sign	Solution Set x_1 *and* x_2 Represent the zeroes
$a > 0$		$<$	$]x_1, x_2[$
$a > 0$		$\leq$	$[x_1, x_2]$