

## Graphing Cheat Sheet

## Slope and Equation of a Line

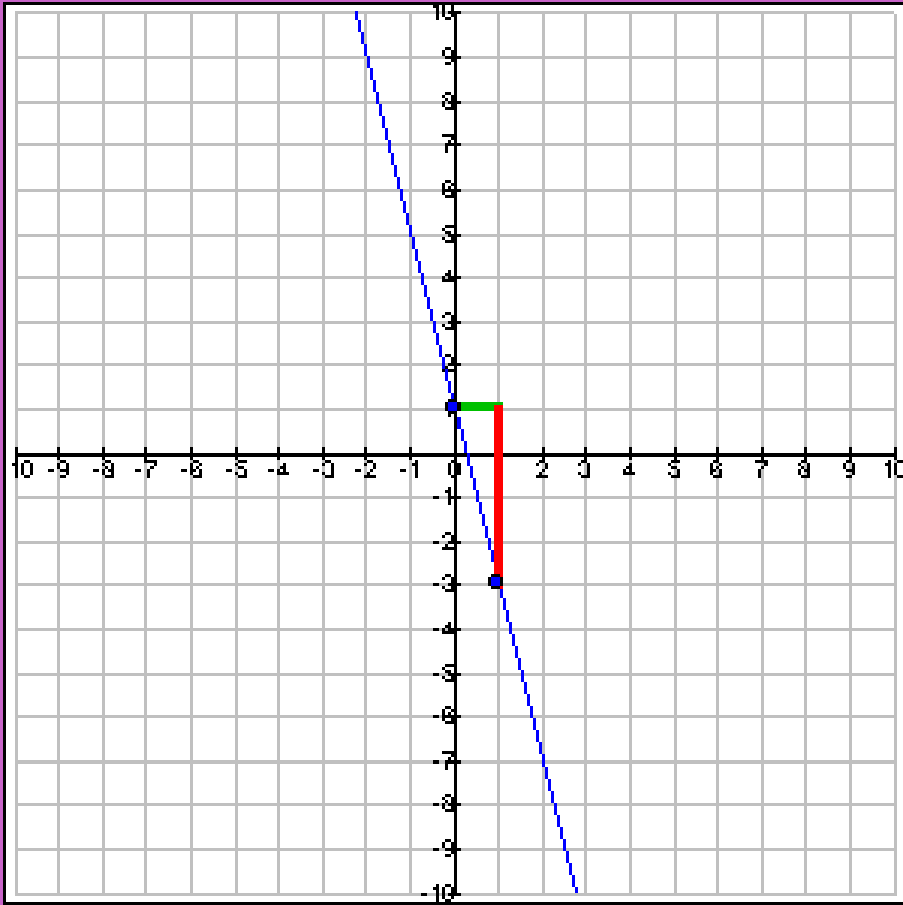
The slope of a line is the ratio of  $\frac{\text{rise}}{\text{run}}$

- A line with a **positive slope** moves **up** and to the **right**.
- A line with a **negative slope** moves **down** and to the **right**.
- A line with a **slope of '0'** is **horizontal**.
- The **y-intercept** is the point where the line crosses the **y-axis**.
- The equation of the line is  **$y = mx + b$** , where **m** is the **slope** and **b** is the **y-intercept**.

### The Equation of a Line - Chart

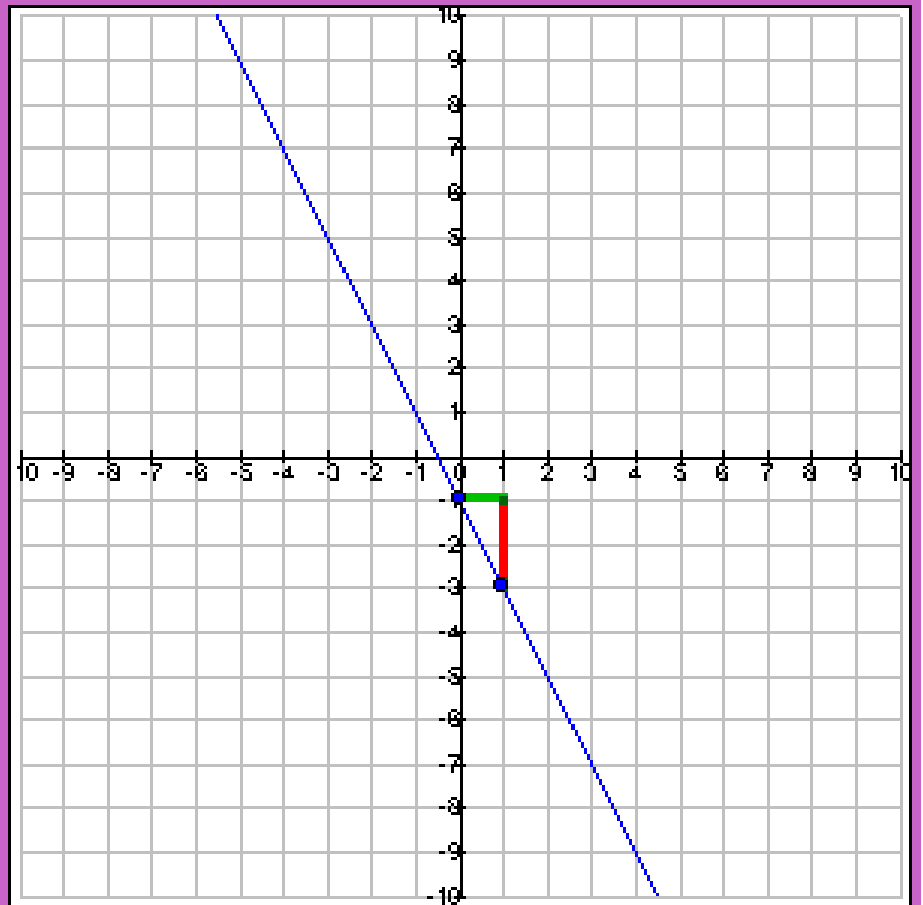
Card Number	Slope	y-Intercept	Equation of the Line
			y =
			y =
			y =
			y =
			y =
			y =
			y =
			y =
			y =
			y =
			y =
			y =
			y =
			y =
			y =

# Slope Cards



Slope Card 1

Slope Card 1  
Slope =  $-4$   
y-Intercept =  $1$   
Equation of Line:  $y = -4x + 1$



Slope Card 2

Slope Card 2  
Slope =  $-2$   
y-Intercept =  $-1$   
Equation of Line:  $y = -2x - 1$

## Graphing Cheat Sheet

## Reading Systems of Equations Graphs

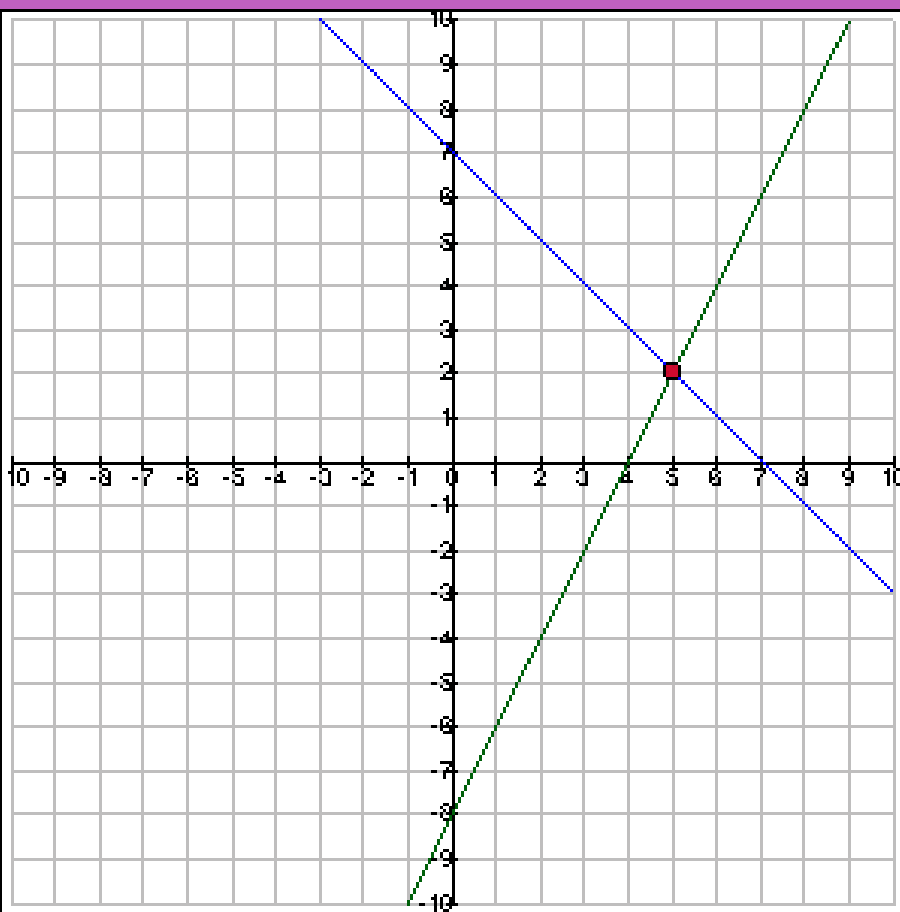
- The slope-intercept form for an equation is:

$$\underline{y = mx + b}$$

- For each equation:
  - Find the **y-intercept** on the graph.
  - Beginning at the **y-intercept**, move one to the right, and count the number of spaces that the line moves up or down to find the **slope**.
- The solution set is the point where the two lines meet.

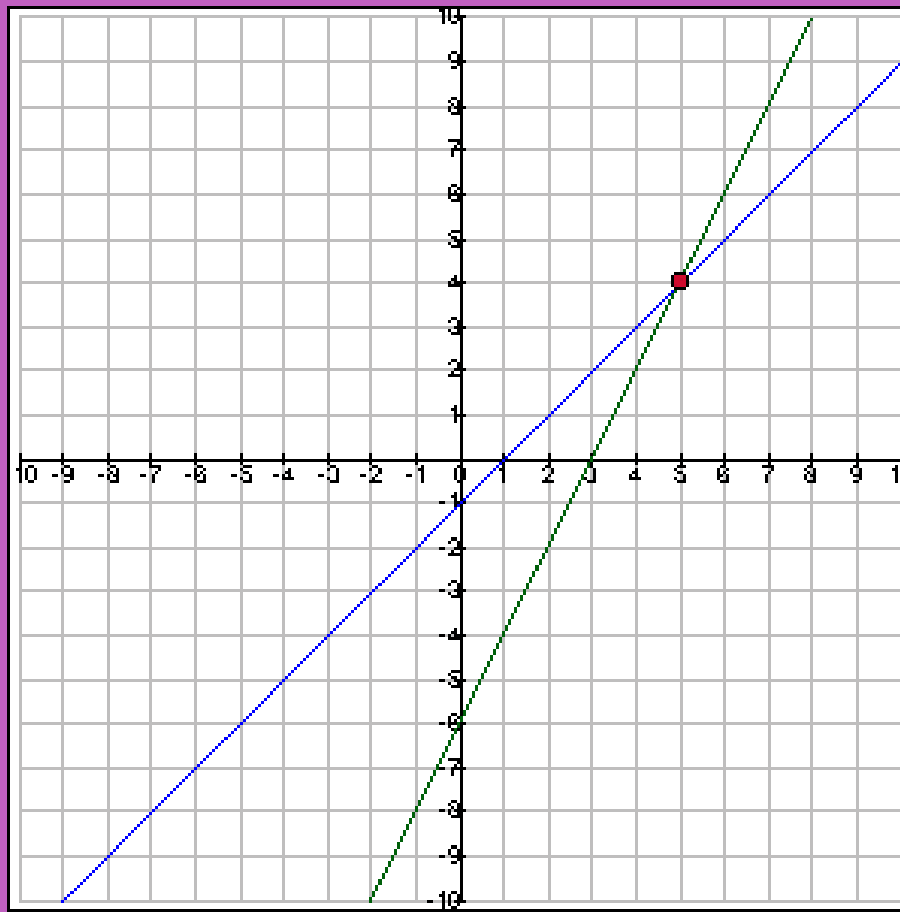
Card #	Blue Line	Green Line	Solution
	y =	y =	( , )
	y =	y =	( , )
	y =	y =	( , )
	y =	y =	( , )
	y =	y =	( , )
	y =	y =	( , )
	y =	y =	( , )
	y =	y =	( , )
	y =	y =	( , )
	y =	y =	( , )
	y =	y =	( , )
	y =	y =	( , )

# Systems of Equations Cards



Systems of Equations Systems of Equations Card 1

Systems of Equations Card 1  
Green Line:  $y = 2x - 8$   
Blue Line:  $y = -x + 7$   
Solution (5, 2)



Systems of Equations Card 2

Systems of Equations Card 2  
Green Line:  $y = 2x - 6$   
Blue Line:  $y = x - 1$   
Solution (5, 4)

## Graphing Cheat Sheet

## Reading Systems of Inequalities Graphs

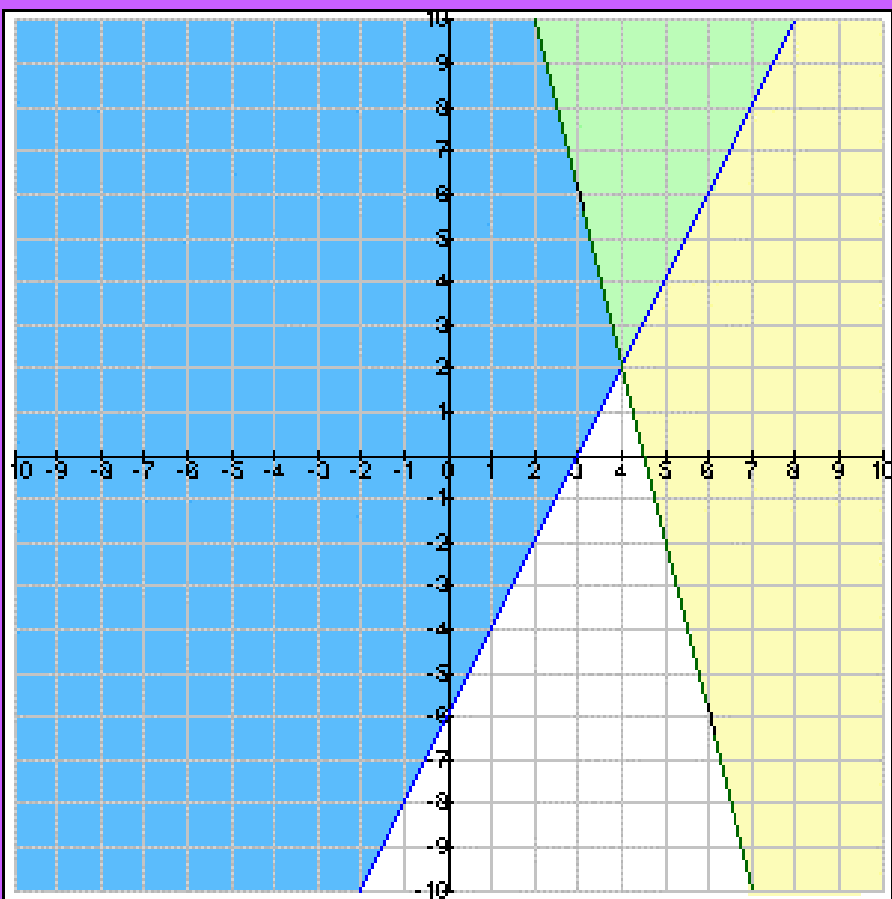
- The slope-intercept form for inequalities is:

$$y <> mx + b$$

- For each inequality:
  - Find the **y-intercept** on the graph.
  - Beginning at the **y-intercept**, move one to the right, and count the number that the line moves up or down to find the **slope**.
  - If the line is **dotted** line the inequality is  $<$  or  $>$ ; if the line is **solid**, the inequality is  $\leq$  or  $\geq$ .
  - If the graph is shaded **above** the line use  $\geq$  or  $\leq$ ; if it is shaded **below** the line use  $\leq$  or  $\geq$ .
- The solution set is the area that the two shaded sections share.

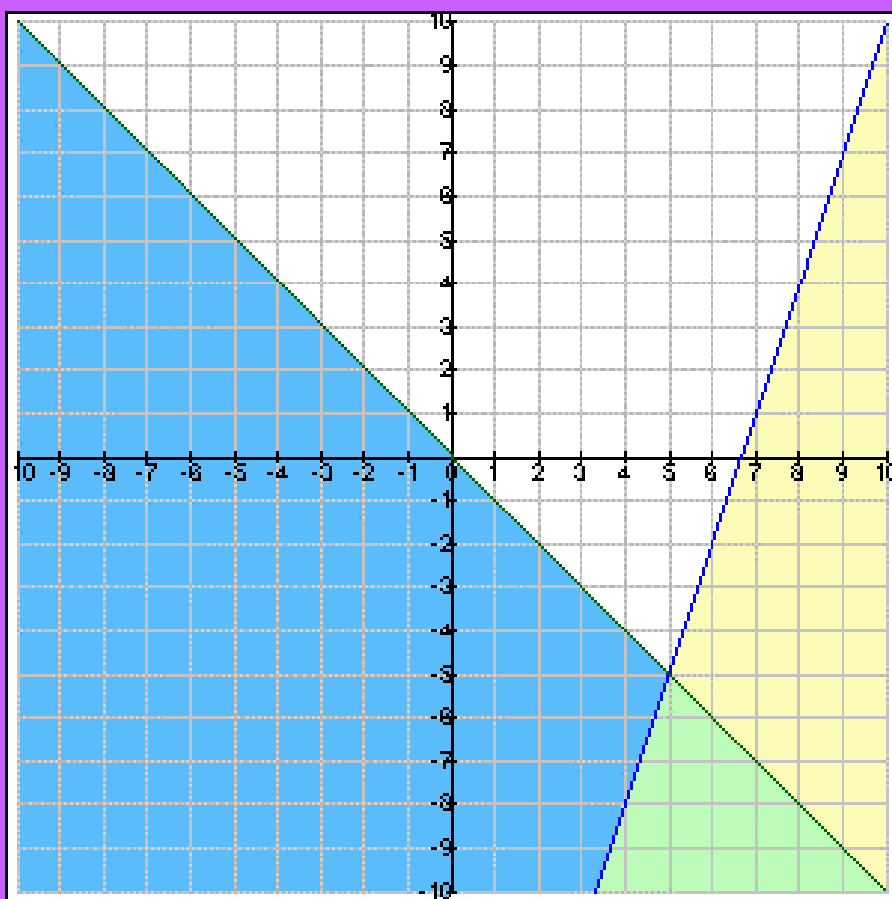
Card #	1 <sup>st</sup> Inequality	2nd Inequality
	<b>y</b>	<b>y</b>
	<b>y</b>	<b>y</b>
	<b>y</b>	<b>y</b>
	<b>y</b>	<b>y</b>
	<b>y</b>	<b>y</b>
	<b>y</b>	<b>y</b>
	<b>y</b>	<b>y</b>
	<b>y</b>	<b>y</b>
	<b>y</b>	<b>y</b>

# Systems of Inequalities Cards



Systems of Inequalities Card 1

Systems of Inequalities Card 1  
Blue:  $y \geq 2x - 6$   
Yellow:  $y \geq -4x + 18$   
Green = Solution Set (Intersection = 4, 2)



Systems of Inequalities Card 2

Systems of Inequalities Card 2  
Blue:  $y \leq -x$   
Yellow:  $y \leq 3x - 20$   
Green = Solution Set (Intersection = 5, -5)

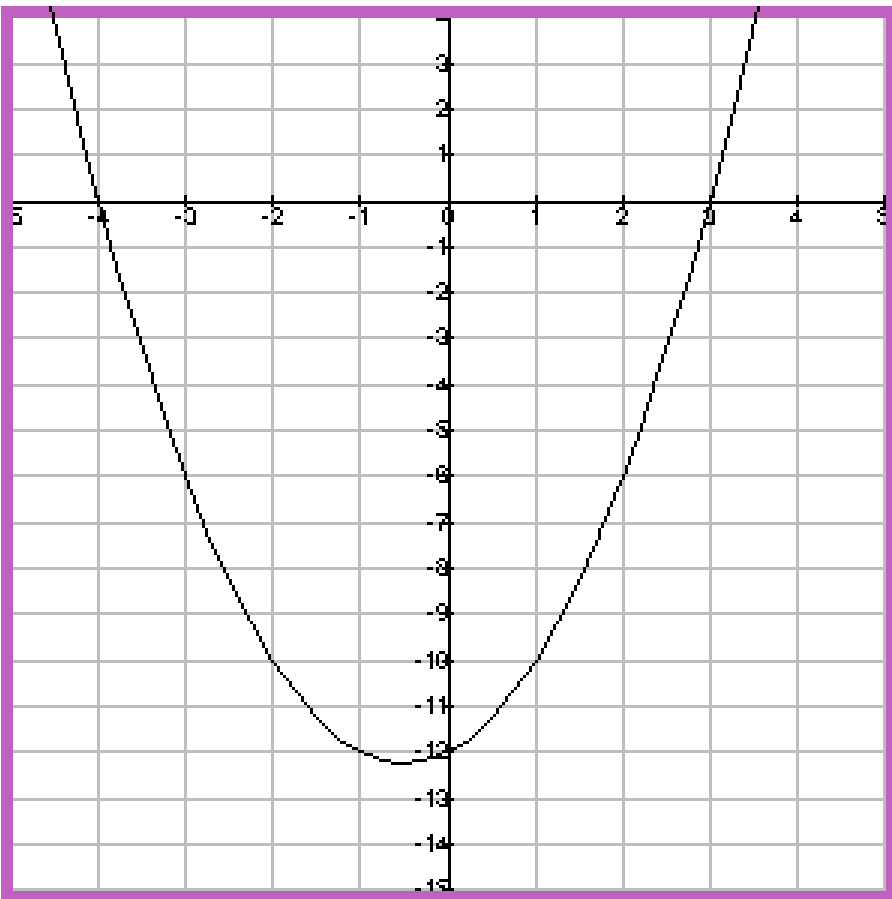
## Graphing Cheat Sheet

## Graphs of Second Degree Equations

- The solutions of the equation are the **x-intercepts** of the graph.
- The value of '**b**' in the standard form of the quadratic equation is the **sum of the x-intercepts** multiplied by -1.
- The **y-intercept** is the value of '**c**' in the standard form of the quadratic equation.

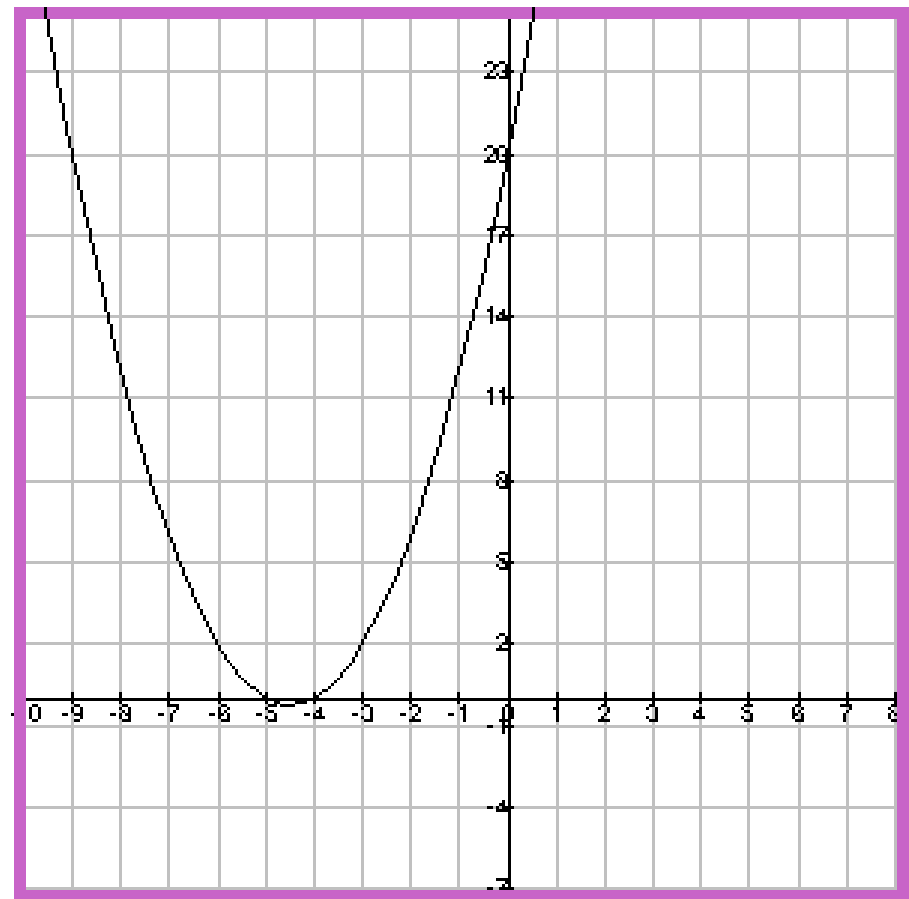
Card #	Values of 'x'	Value of 'b'	Value of 'c'	Quadratic Equation
	{ , }			y=
	{ , }			y=
	{ , }			y=
	{ , }			y=
	{ , }			y=
	{ , }			y=
	{ , }			y=
	{ , }			y=
	{ , }			y=
	{ , }			y=
	{ , }			y=
	{ , }			y=
	{ , }			y=
	{ , }			y=
	{ , }			y=

# Parabola Cards



Parabola Card 1

Parabola Card 1  
 $x^2 + x - 12$   
 $(x+4)(x-3)$   
 $x = -4; x = 3; y\text{-intercept} = -12$



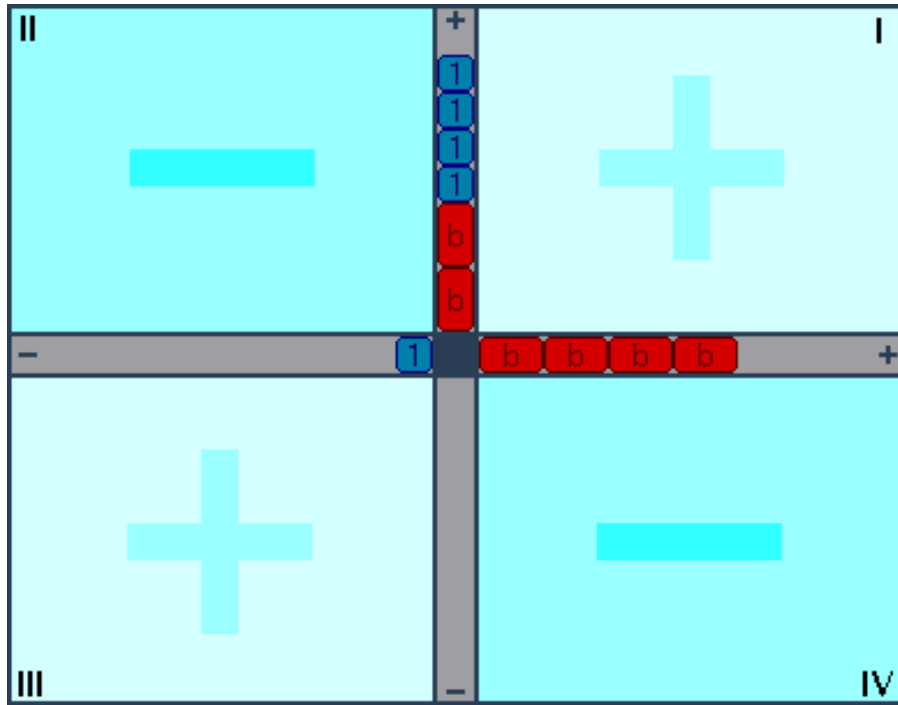
Parabola Card 2

Parabola Card 2  
 $x^2 + 9x + 20$   
 $(x+4)(x+5)$   
 $x = -4; x = -5; y\text{-intercept} = 20$

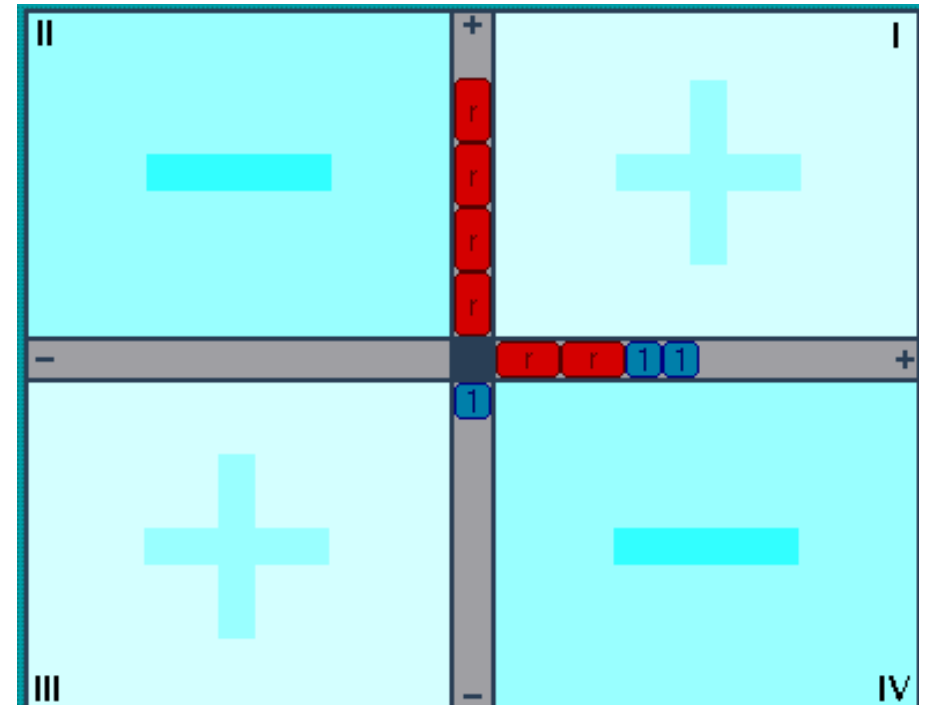


# Multiply Binomial Cards

**Multiply Binomial Card 1**



**Multiply Binomial Card 2**



**Multiply Binomial Card 1**

$$(4b + 1)(2b + 2)$$

$$8b^2 + 14b - 4$$

**Multiply Binomial Card 2**

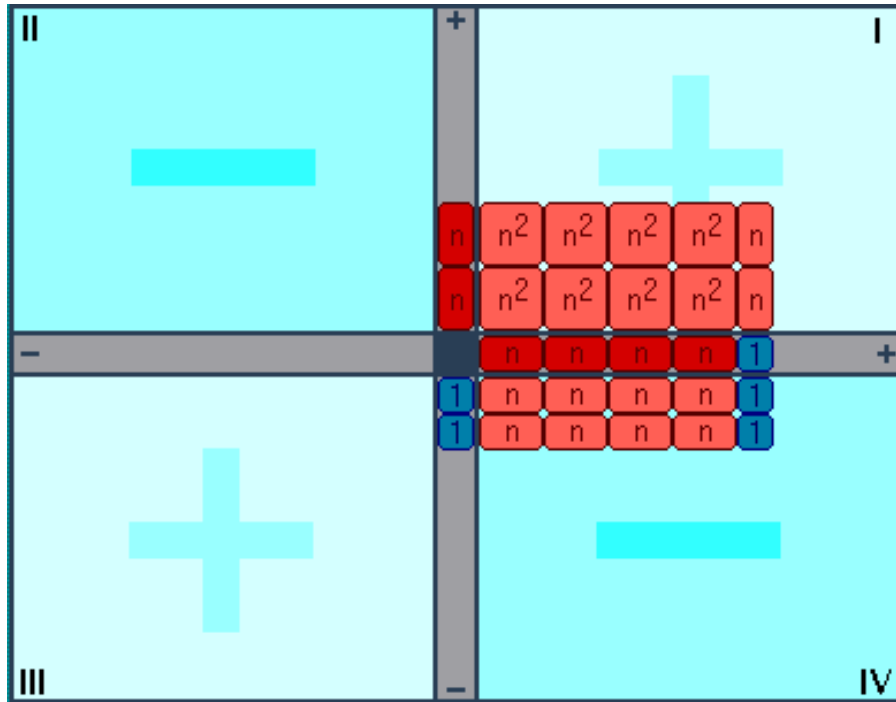
$$(2r + 2)(4r - 1)$$

$$8r^2 + 6r - 2$$

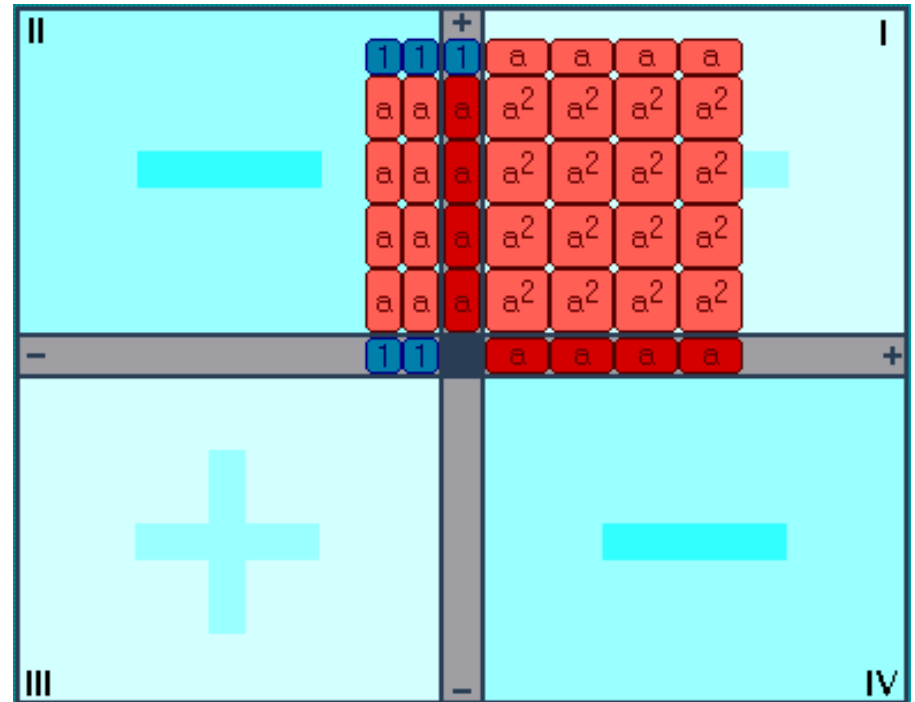


# Factor Trinomial Cards

**Factor Trinomial Card 1**



**Factor Trinomial Card 2**



**Factor Trinomial Card 1**

$$(4n + 1)(2n - 2)$$

$$8n^2 - 6n - 2$$

**Factor Trinomial Card 2**

$$(4a - 2)(4a + 1)$$

$$16a^2 - 4a - 2$$