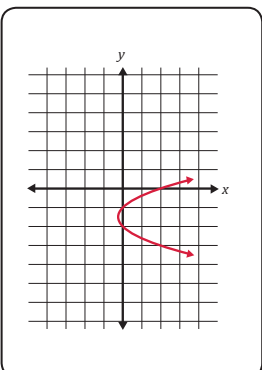
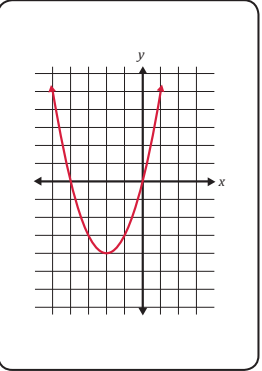
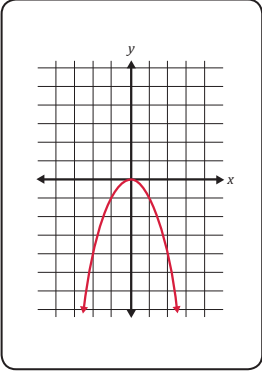
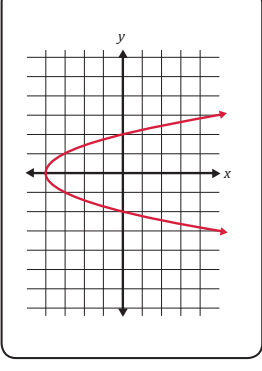
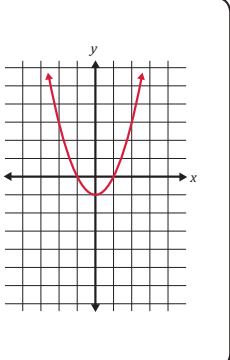
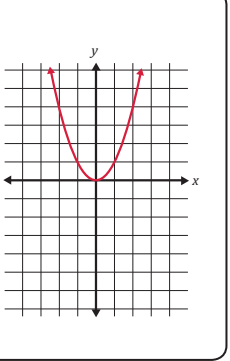
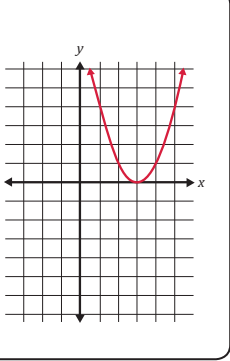
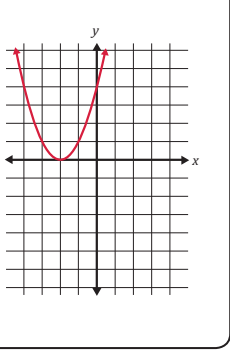


The Algebra Game: Quadratic Equations Matching Card Sets

Deck A, Basic Set				
Graph	Factors	Roots	Equation	Standard Form
	$(y + 1)(y + 2)$ factors $(y + 1)(y + 2)$	$y = -1, y = -2$ roots $y = -1, y = -2$	$y^2 + 3y + 2 = x$ equation $y^2 + 3y + 2 = x$	$y^2 - x + 3y + 2 = 0$ standard form $y^2 - x + 3y + 2 = 0$
	$(x)(x + 4)$ factors $(x + 4)(x)$	$x = 0, x = -4$ roots $x = 0, x = -4$	$y = x^2 + 4x$ equation $y = x^2 + 4x$	$x^2 + 4x - y = 0$ standard form $x^2 + 4x - y = 0$
	$(x)(-x)$ factors $(x-)(x)$	$x = 0$ roots $0 = x$	$y = -x^2$ equation $y = -x^2$	$x^2 + y = 0$ standard form $x^2 + y = 0$
	$(y + 2)(y - 2)$ factors $(y + 2)(y - 2)$	$y = +2, y = -2$ roots $y = +2, y = -2$	$y^2 - 4 = x$ equation $y^2 - 4 = x$	$y^2 - x - 4 = 0$ standard form $y^2 - x - 4 = 0$

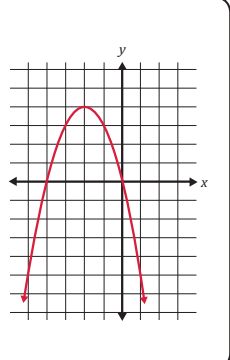
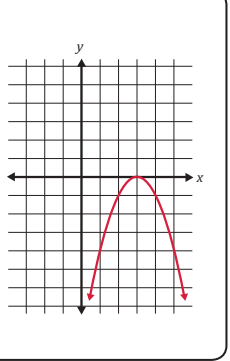
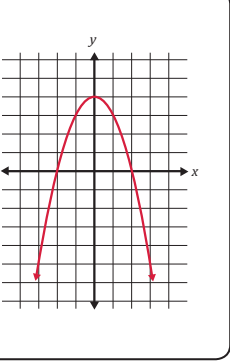
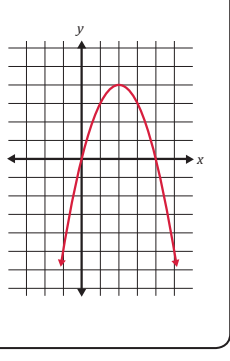
Deck A, Basic	Deck E, Advanced Set															
Coordinate Pair	Vertex	Axis of Symmetry	Discriminant	Quadratic Formula												
coordinate pairs <table border="1" style="display: inline-table;"> <tr><td>x</td><td>y</td></tr> <tr><td>-1/4</td><td>-1 1/2</td></tr> <tr><td>0</td><td>-1</td></tr> <tr><td>0</td><td>-2</td></tr> <tr><td>2</td><td>-3</td></tr> <tr><td>2</td><td>0</td></tr> </table>	x	y	-1/4	-1 1/2	0	-1	0	-2	2	-3	2	0	$(-0.25, -1.5)$ vertex $(-0.25, -1.5)$	$y = -1.5$ axis of symmetry $y = -1.5$	1 discriminant 1	$y = \frac{-3 \pm \sqrt{3^2 - 4(1)(2)}}{2(1)}$ quadratic formula $y = \frac{(1)z}{(2)(1) \pm \sqrt{3^2 - 4(1)(2)}} = y$
x	y															
-1/4	-1 1/2															
0	-1															
0	-2															
2	-3															
2	0															
coordinate pairs <table border="1" style="display: inline-table;"> <tr><td>x</td><td>y</td></tr> <tr><td>-4</td><td>0</td></tr> <tr><td>-3</td><td>-3</td></tr> <tr><td>-2</td><td>-4</td></tr> <tr><td>-1</td><td>-3</td></tr> <tr><td>0</td><td>0</td></tr> </table>	x	y	-4	0	-3	-3	-2	-4	-1	-3	0	0	$(-2, -4)$ vertex $(-2, -4)$	$x = -2$ axis of symmetry $x = -2$	16 discriminant 16	$x = \frac{-4 \pm \sqrt{4^2 - 4(1)(0)}}{2(1)}$ quadratic formula $x = \frac{(1)z}{(2)(1) \pm \sqrt{4^2 - 4(1)(0)}} = x$
x	y															
-4	0															
-3	-3															
-2	-4															
-1	-3															
0	0															
coordinate pairs <table border="1" style="display: inline-table;"> <tr><td>x</td><td>y</td></tr> <tr><td>-2</td><td>-4</td></tr> <tr><td>-1</td><td>-1</td></tr> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>-1</td></tr> <tr><td>2</td><td>-4</td></tr> </table>	x	y	-2	-4	-1	-1	0	0	1	-1	2	-4	$(0, 0)$ vertex $(0, 0)$	$x = 0$ axis of symmetry $0 = x$	0 discriminant 0	$x = \frac{0 \pm \sqrt{0^2 - 4(-1)(0)}}{2(-1)}$ quadratic formula $x = \frac{(1)z}{(0)(-1) \pm \sqrt{0^2 - 4(-1)(0)}} = x$
x	y															
-2	-4															
-1	-1															
0	0															
1	-1															
2	-4															
coordinate pairs <table border="1" style="display: inline-table;"> <tr><td>x</td><td>y</td></tr> <tr><td>-4</td><td>0</td></tr> <tr><td>-3</td><td>1</td></tr> <tr><td>-3</td><td>-1</td></tr> <tr><td>-2</td><td>1.41</td></tr> <tr><td>-2</td><td>-1.41</td></tr> </table>	x	y	-4	0	-3	1	-3	-1	-2	1.41	-2	-1.41	$(-4, 0)$ vertex $(-4, 0)$	$y = 0$ axis of symmetry $0 = y$	16 discriminant 16	$x = \frac{0 \pm \sqrt{0^2 - 4(1)(-4)}}{2(1)}$ quadratic formula $x = \frac{(1)z}{(1)(1) \pm \sqrt{0^2 - 4(1)(-4)}} = x$
x	y															
-4	0															
-3	1															
-3	-1															
-2	1.41															
-2	-1.41															

The Algebra Game: Quadratic Equations Matching Card Sets

Deck A, Basic Set (cont.)				
Graph	Factors	Roots	Equation	Standard Form
	$(x + 1)(x - 1)$ factors $(1 - x)(1 + x)$	$x = +1, x = -1$ roots $1 - = x, 1 + = x$	$y = x^2 - 1$ equation $1 - = x^2$	$x^2 - y - 1 = 0$ standard form $0 = 1 - y - x^2$
	$(x)(x)$ factors $(x)(x)$	$x = 0$ roots $0 = x$	$y = x^2$ equation $x^2 = y$	$x^2 - y = 0$ standard form $0 = y - x^2$
	$(x - 3)^2$ factors $(x - 3)(x - 3)$	$x = +3$ roots $3 + = x$	$y = x^2 - 6x + 9$ equation $6 + x^2 - 9 = y$	$x^2 - 6x - y + 9 = 0$ standard form $0 = 6 + y - 9 - x^2$
	$(x + 2)^2$ factors $(x + 2)(x + 2)$	$x = -2$ roots $2 - = x$	$x^2 + 4x + 4 = y$ equation $y = x^2 + 4x + 4$	$x^2 + 4x - y + 4 = 0$ standard form $0 = 4 + y - x^2 - 4x$

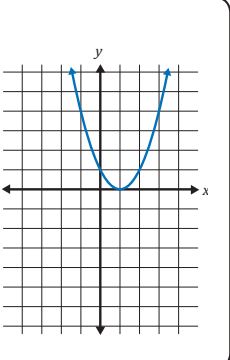
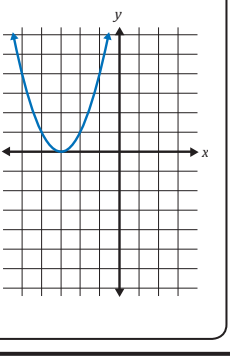
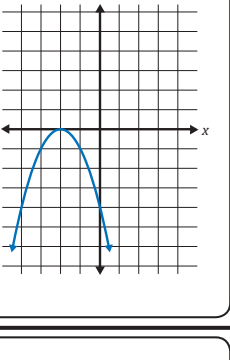
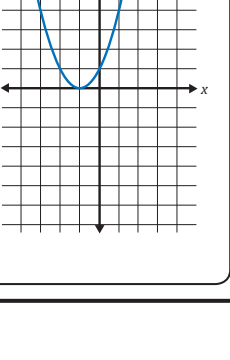
Deck A, Basic	Deck E, Advanced Set (cont.)																			
Coordinate Pair	Vertex	Axis of Symmetry	Discriminant	Quadratic Formula																
coordinate pairs <table border="1" style="display: inline-table;"> <tr><td>x</td><td>y</td></tr> <tr><td>-2</td><td>3</td></tr> <tr><td>-1</td><td>0</td></tr> <tr><td>0</td><td>-1</td></tr> <tr><td>1</td><td>0</td></tr> <tr><td>2</td><td>3</td></tr> </table>	x	y	-2	3	-1	0	0	-1	1	0	2	3	$(0, -1)$ vertex $(1, -1)$	$x = 0$ axis of symmetry $0 = x$	4 discriminant 4	$x = \frac{0 \pm \sqrt{0^2 - 4(1)(-1)}}{2(1)}$ quadratic formula $\frac{(1)z}{(1)(1) \pm \sqrt{0^2 - 4(1)(-1)}} = x$				
x	y																			
-2	3																			
-1	0																			
0	-1																			
1	0																			
2	3																			
coordinate pairs <table border="1" style="display: inline-table;"> <tr><td>x</td><td>y</td></tr> <tr><td>-2</td><td>4</td></tr> <tr><td>-1</td><td>1</td></tr> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>1</td></tr> <tr><td>2</td><td>4</td></tr> </table>	x	y	-2	4	-1	1	0	0	1	1	2	4	$(0, 0)$ vertex $(0, 0)$	$x = 0$ axis of symmetry $0 = x$	0 discriminant 0	$x = \frac{0 \pm \sqrt{0^2 - 4(1)(0)}}{2(1)}$ quadratic formula $\frac{(1)z}{(1)(1) \pm \sqrt{0^2 - 4(1)(0)}} = x$				
x	y																			
-2	4																			
-1	1																			
0	0																			
1	1																			
2	4																			
coordinate pairs <table border="1" style="display: inline-table;"> <tr><td>x</td><td>y</td></tr> <tr><td>0</td><td>9</td></tr> <tr><td>1</td><td>4</td></tr> <tr><td>2</td><td>1</td></tr> <tr><td>3</td><td>0</td></tr> <tr><td>4</td><td>1</td></tr> <tr><td>5</td><td>4</td></tr> <tr><td>6</td><td>9</td></tr> </table>	x	y	0	9	1	4	2	1	3	0	4	1	5	4	6	9	$(3, 0)$ vertex $(3, 0)$	$x = 3$ axis of symmetry $3 = x$	0 discriminant 0	$x = \frac{6 \pm \sqrt{(-6)^2 - 4(1)(9)}}{2(1)}$ quadratic formula $\frac{(1)z}{(1)(1) \pm \sqrt{(-6)^2 - 4(1)(9)}} = x$
x	y																			
0	9																			
1	4																			
2	1																			
3	0																			
4	1																			
5	4																			
6	9																			
coordinate pairs <table border="1" style="display: inline-table;"> <tr><td>x</td><td>y</td></tr> <tr><td>-4</td><td>4</td></tr> <tr><td>-3</td><td>1</td></tr> <tr><td>-2</td><td>0</td></tr> <tr><td>-1</td><td>1</td></tr> <tr><td>0</td><td>4</td></tr> </table>	x	y	-4	4	-3	1	-2	0	-1	1	0	4	$(-2, 0)$ vertex $(-2, 0)$	$x = -2$ axis of symmetry $-2 = x$	0 discriminant 0	$x = \frac{-4 \pm \sqrt{4^2 - 4(1)(4)}}{2(1)}$ quadratic formula $\frac{(1)z}{(1)(1) \pm \sqrt{4^2 - 4(1)(4)}} = x$				
x	y																			
-4	4																			
-3	1																			
-2	0																			
-1	1																			
0	4																			

The Algebra Game: Quadratic Equations Matching Card Sets

Deck A, Basic Set (cont.)				
Graph	Factors	Roots	Equation	Standard Form
	$(-x)(x + 4)$ factors $(x + 4)(-x)$	$x = 0, x = -4$ roots $x = 0, x = -4$	$-x^2 - 4x = y$ equation $-x^2 - 4x = y$	$x^2 + 4x + y = 0$ standard form $x^2 + 4x + y = 0$
	$(-x + 3)(x - 3)$ factors $(x - 3)(-x + 3)$	$x = +3$ roots $x = +3$	$-x^2 + 6x - 9 = y$ equation $-x^2 + 6x - 9 = y$	$x^2 - 6x + y + 9 = 0$ standard form $x^2 - 6x + y + 9 = 0$
	$(-x + 2)(x + 2)$ factors $(x + 2)(-x + 2)$	$x = +2, x = -2$ roots $x = +2, x = -2$	$-x^2 + 4 = y$ equation $-x^2 + 4 = y$	$x^2 + y - 4 = 0$ standard form $x^2 + y - 4 = 0$
	$(-x)(x - 4)$ factors $(x - 4)(-x)$	$x = 0, x = +4$ roots $x = 0, x = +4$	$y = -x^2 + 4x$ equation $y = -x^2 + 4x$	$x^2 - 4x + y = 0$ standard form $x^2 - 4x + y = 0$

Deck A, Basic	Deck E, Advanced Set (cont.)			
Coordinate Pair	Vertex	Axis of Symmetry	Discriminant	Quadratic Formula
coordinate pairs $\begin{array}{c c} x & y \\ \hline -4 & 0 \\ -3 & 3 \\ -2 & 4 \\ -1 & 3 \\ 0 & 0 \end{array}$	$(-2, 4)$ vertex $(-2, 4)$	$x = -2$ axis of symmetry $x = -2$	16 discriminant 16	$x = \frac{4 \pm \sqrt{(-4)^2 - 4(-1)(0)}}{2(-1)}$ quadratic formula $x = \frac{4 \pm \sqrt{16 - 0}}{-2} = x$
coordinate pairs $\begin{array}{c c} x & y \\ \hline 1 & -4 \\ 2 & -1 \\ 3 & 0 \\ 4 & -1 \\ 5 & -4 \end{array}$	$(3, 0)$ vertex $(3, 0)$	$x = 3$ axis of symmetry $x = 3$	0 discriminant 0	$x = \frac{-6 \pm \sqrt{6^2 - 4(-1)(-9)}}{2(-1)}$ quadratic formula $x = \frac{-6 \pm \sqrt{36 - 36}}{-2} = x$
coordinate pairs $\begin{array}{c c} x & y \\ \hline -2 & 0 \\ -1 & 3 \\ 0 & 4 \\ 1 & 3 \\ 2 & 0 \end{array}$	$(0, 4)$ vertex $(0, 4)$	$x = 0$ axis of symmetry $x = 0$	16 discriminant 16	$x = \frac{0 \pm \sqrt{0^2 - 4(-1)(4)}}{2(-1)}$ quadratic formula $x = \frac{0 \pm \sqrt{0 - 16}}{-2} = x$
coordinate pairs $\begin{array}{c c} x & y \\ \hline 0 & 0 \\ 1 & 3 \\ 2 & 4 \\ 3 & 3 \\ 4 & 0 \end{array}$	$(2, 4)$ vertex $(2, 4)$	$x = 2$ axis of symmetry $x = 2$	16 discriminant 16	$x = \frac{-4 \pm \sqrt{4^2 - 4(-1)(0)}}{2(-1)}$ quadratic formula $x = \frac{-4 \pm \sqrt{16 - 0}}{-2} = x$

The Algebra Game: Quadratic Equations Matching Card Sets

Deck B, Basic Set				
Graph	Factors	Roots	Equation	Standard Form
	$(x - 1)^2$ factors $z(1 - x)^2$	$x = +1$ roots $1 + = x$	$x^2 - 2x + 1 = y$ equation $y = 1 + xz - z^2x$	$x^2 - 2x - y + 1 = 0$ standard form $0 = 1 + y - xz - z^2x$
	$(x + 3)^2$ factors $z(x + 3)^2$	$x = -3$ roots $x - = x$	$x^2 + 6x + 9 = y$ equation $y = 6 + xz + z^2x$	$x^2 + 6x - y + 9 = 0$ standard form $0 = 6 + y - xz + z^2x$
	$(-x - 2)(x + 2)$ factors $(z + x)(z - x - 2)$	$x = -2$ roots $z - = x$	$-x^2 - 4x - 4 = y$ equation $y = -4 - xz - z^2x$	$x^2 + 4x + y + 4 = 0$ standard form $0 = 4 + y + xz + z^2x$
	$(x + 1)^2$ factors $z(1 + x)^2$	$x = -1$ roots $1 - = x$	$y = x^2 + 2x + 1$ equation $1 + xz + z^2x = y$	$x^2 + 2x - y + 1 = 0$ standard form $0 = 1 + y - xz + z^2x$

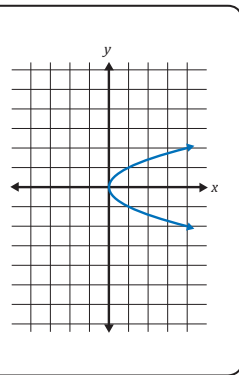
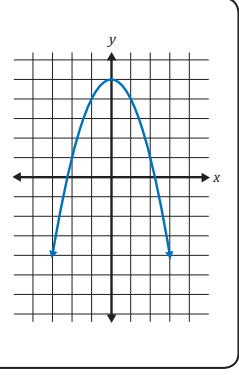
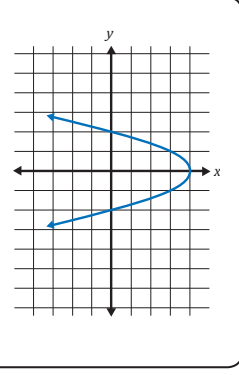
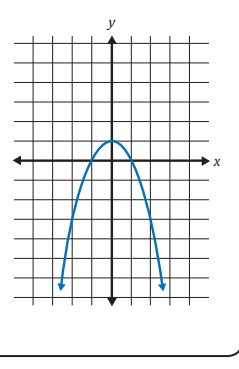
Deck B, Basic	Deck F, Advanced Set															
Coordinate Pair	Vertex	Axis of Symmetry	Discriminant	Quadratic Formula												
coordinate pairs <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>x</td><td>y</td></tr> <tr><td>-1</td><td>4</td></tr> <tr><td>0</td><td>1</td></tr> <tr><td>1</td><td>0</td></tr> <tr><td>2</td><td>1</td></tr> <tr><td>3</td><td>4</td></tr> </table>	x	y	-1	4	0	1	1	0	2	1	3	4	$(1, 0)$ vertex $(0, 1)$	$x = 1$ axis of symmetry $1 = x$	0 discriminant 0	$x = \frac{2 \pm \sqrt{(-2)^2 - 4(1)(1)}}{2(1)}$ quadratic formula $\frac{(1)z}{(1)(1)4 - z^2\sqrt{(-2)^2 - 4(1)(1)}} = x$
x	y															
-1	4															
0	1															
1	0															
2	1															
3	4															
coordinate pairs <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>x</td><td>y</td></tr> <tr><td>-5</td><td>4</td></tr> <tr><td>-4</td><td>1</td></tr> <tr><td>-3</td><td>0</td></tr> <tr><td>-2</td><td>1</td></tr> <tr><td>-1</td><td>4</td></tr> </table>	x	y	-5	4	-4	1	-3	0	-2	1	-1	4	$(-3, 0)$ vertex $(0, -3)$	$x = -3$ axis of symmetry $x - = x$	0 discriminant 0	$x = \frac{-6 \pm \sqrt{6^2 - 4(1)(9)}}{2(1)}$ quadratic formula $\frac{(1)z}{(6)(1)4 - z^2\sqrt{6^2 - 4(1)(9)}} = x$
x	y															
-5	4															
-4	1															
-3	0															
-2	1															
-1	4															
coordinate pairs <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>x</td><td>y</td></tr> <tr><td>-4</td><td>-4</td></tr> <tr><td>-3</td><td>-1</td></tr> <tr><td>-2</td><td>0</td></tr> <tr><td>-1</td><td>-1</td></tr> <tr><td>0</td><td>-4</td></tr> </table>	x	y	-4	-4	-3	-1	-2	0	-1	-1	0	-4	$(-2, 0)$ vertex $(0, -2)$	$x = -2$ axis of symmetry $z - = x$	0 discriminant 0	$x = \frac{4 \pm \sqrt{(-4)^2 - 4(-1)(-4)}}{2(-1)}$ quadratic formula $\frac{(1)z}{(4)(-1)4 - z^2\sqrt{(-4)^2 - 4(-1)(-4)}} = x$
x	y															
-4	-4															
-3	-1															
-2	0															
-1	-1															
0	-4															
coordinate pairs <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>x</td><td>y</td></tr> <tr><td>-3</td><td>4</td></tr> <tr><td>-2</td><td>1</td></tr> <tr><td>-1</td><td>0</td></tr> <tr><td>0</td><td>1</td></tr> <tr><td>1</td><td>4</td></tr> </table>	x	y	-3	4	-2	1	-1	0	0	1	1	4	$(-1, 0)$ vertex $(0, -1)$	$x = -1$ axis of symmetry $1 - = x$	0 discriminant 0	$x = \frac{-2 \pm \sqrt{2^2 - 4(1)(1)}}{2(1)}$ quadratic formula $\frac{(1)z}{(1)(1)4 - z^2\sqrt{2^2 - 4(1)(1)}} = x$
x	y															
-3	4															
-2	1															
-1	0															
0	1															
1	4															

The Algebra Game: Quadratic Equations Matching Card Sets

Deck B, Basic Set (cont.)				
Graph	Factors	Roots	Equation	Standard Form
	$(-x + 2)(x - 2)$ factors $(z - x)(z + x -)$	$x = +2$ roots $z + = x$	$-x^2 + 4x - 4 = y$ equation $y = -x^2 + 4x - 4 = y$	$x^2 - 4x + y + 4 = 0$ standard form $0 = -x^2 + 4x + y + 4 = 0$
	$(x + 2)(x - 2)$ factors $(z - x)(z + x)$	$x = +2, x = -2$ roots $-z = +2, x = -2$	$x^2 - 4 = y$ equation $y = x^2 - 4 = y$	$x^2 - y - 4 = 0$ standard form $0 = x^2 - y - 4 = 0$
	$(x + \sqrt{2})(x - \sqrt{2})$ factors $(z - x)(z + x)$	$x = +\sqrt{2}, x = -\sqrt{2}$ roots $-z = +\sqrt{2}, x = -\sqrt{2}$	$y = x^2 - 2$ equation $y = x^2 - 2 = y$	$x^2 - y - 2 = 0$ standard form $0 = x^2 - y - 2 = 0$
	$(-x - \sqrt{2})(x - \sqrt{2})$ factors $(z - x)(z - x -)$	$x = +\sqrt{2}, x = -\sqrt{2}$ roots $-z = +\sqrt{2}, x = -\sqrt{2}$	$y = -x^2 + 2$ equation $y = -x^2 + 2 = y$	$x^2 + y - 2 = 0$ standard form $0 = x^2 + y - 2 = 0$

Deck B, Basic	Deck F, Advanced Set (cont.)																			
Coordinate Pair	Vertex	Axis of Symmetry	Discriminant	Quadratic Formula																
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>0</td><td>-4</td></tr> <tr><td>1</td><td>-1</td></tr> <tr><td>2</td><td>0</td></tr> <tr><td>3</td><td>-1</td></tr> <tr><td>4</td><td>-4</td></tr> </table>	x	y	0	-4	1	-1	2	0	3	-1	4	-4	$(2, 0)$ vertex $(0, z)$	$x = 2$ axis of symmetry $z = x$	0 discriminant 0	$x = \frac{-4 \pm \sqrt{4^2 - 4(-1)(-4)}}{2(-1)}$ quadratic formula $\frac{(1-z)}{(z-1)} = x$				
x	y																			
0	-4																			
1	-1																			
2	0																			
3	-1																			
4	-4																			
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-2</td><td>0</td></tr> <tr><td>-1</td><td>-3</td></tr> <tr><td>0</td><td>-4</td></tr> <tr><td>1</td><td>-3</td></tr> <tr><td>2</td><td>0</td></tr> </table>	x	y	-2	0	-1	-3	0	-4	1	-3	2	0	$(0, -4)$ vertex $(z, -4)$	$x = 0$ axis of symmetry $0 = x$	16 discriminant 16	$x = \frac{0 \pm \sqrt{0^2 - 4(1)(-4)}}{2(1)}$ quadratic formula $\frac{(1)z}{(z-1)} = x$				
x	y																			
-2	0																			
-1	-3																			
0	-4																			
1	-3																			
2	0																			
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-2</td><td>2</td></tr> <tr><td>$-\sqrt{2}$</td><td>0</td></tr> <tr><td>-1</td><td>-1</td></tr> <tr><td>0</td><td>-2</td></tr> <tr><td>1</td><td>-1</td></tr> <tr><td>$\sqrt{2}$</td><td>0</td></tr> <tr><td>2</td><td>2</td></tr> </table>	x	y	-2	2	$-\sqrt{2}$	0	-1	-1	0	-2	1	-1	$\sqrt{2}$	0	2	2	$(0, -2)$ vertex $(z, -0)$	$x = 0$ axis of symmetry $0 = x$	8 discriminant 8	$x = \frac{0 \pm \sqrt{0^2 - 4(1)(-2)}}{2(1)}$ quadratic formula $\frac{(1)z}{(z-1)} = x$
x	y																			
-2	2																			
$-\sqrt{2}$	0																			
-1	-1																			
0	-2																			
1	-1																			
$\sqrt{2}$	0																			
2	2																			
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-2</td><td>-2</td></tr> <tr><td>$-\sqrt{2}$</td><td>0</td></tr> <tr><td>-1</td><td>1</td></tr> <tr><td>0</td><td>2</td></tr> <tr><td>1</td><td>1</td></tr> <tr><td>$\sqrt{2}$</td><td>0</td></tr> <tr><td>2</td><td>-2</td></tr> </table>	x	y	-2	-2	$-\sqrt{2}$	0	-1	1	0	2	1	1	$\sqrt{2}$	0	2	-2	$(0, 2)$ vertex $(z, 0)$	$x = 0$ axis of symmetry $0 = x$	8 discriminant 8	$x = \frac{0 \pm \sqrt{0^2 - 4(-1)(2)}}{2(-1)}$ quadratic formula $\frac{(1-z)}{(z-1)} = x$
x	y																			
-2	-2																			
$-\sqrt{2}$	0																			
-1	1																			
0	2																			
1	1																			
$\sqrt{2}$	0																			
2	-2																			

The Algebra Game: Quadratic Equations Matching Card Sets

Deck B, Basic Set (cont.)				
Graph	Factors	Roots	Equation	Standard Form
	$(y)(y)$ factors $(\mathcal{L})(\mathcal{L})$	$y = 0$ roots $0 = \mathcal{Y}$	$x = y^2$ equation $\mathcal{Z}\mathcal{Y}^2 = x$	$y^2 - x = 0$ standard form $0 = x - \mathcal{Y}^2$
	$(-x + \sqrt{5})(x + \sqrt{5})$ factors $(\mathcal{S}\sqrt{+}x)(\mathcal{S}\sqrt{+}x-)$	$x = +\sqrt{5}, x = -\sqrt{5}$ roots $\mathcal{S}\sqrt{-} = x + \sqrt{5}, \mathcal{S}\sqrt{+} = x - \sqrt{5}$	$y = -x^2 + 5$ equation $\mathcal{S} + \mathcal{Z}\mathcal{X}^2 = \mathcal{Y}$	$x^2 + y - 5 = 0$ standard form $0 = \mathcal{S} - \mathcal{Y} + \mathcal{Z}\mathcal{X}^2$
	$(-y - 2)(y - 2)$ factors $(-\mathcal{Y} - 2)(\mathcal{Y} - 2)$	$y = +2, y = -2$ roots $\mathcal{Y} = +2, \mathcal{Y} = -2$	$x = -y^2 + 4$ equation $4 + \mathcal{X} = -\mathcal{Y}^2$	$y^2 + x - 4 = 0$ standard form $0 = \mathcal{Y}^2 + \mathcal{X} - 4$
	$(-x + 1)(x + 1)$ factors $(\mathcal{I} + \mathcal{X})(\mathcal{I} + \mathcal{X}-)$	$x = +1, x = -1$ roots $\mathcal{X} = +1, \mathcal{X} = -1$	$y = -x^2 + 1$ equation $\mathcal{I} + \mathcal{X}^2 = \mathcal{Y}$	$x^2 + y - 1 = 0$ standard form $0 = \mathcal{I} - \mathcal{Y} + \mathcal{X}^2$

Deck B, Basic	Deck E, Advanced Set (cont.)																			
Coordinate Pair	Vertex	Axis of Symmetry	Discriminant	Quadratic Formula																
coordinate pairs <table border="1" style="display: inline-table;"> <tr><td>x</td><td>y</td></tr> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>1</td></tr> <tr><td>1</td><td>-1</td></tr> <tr><td>2</td><td>1.41</td></tr> <tr><td>2</td><td>-1.41</td></tr> </table>	x	y	0	0	1	1	1	-1	2	1.41	2	-1.41	$(0, 0)$ vertex $(0, 0)$	$y = 0$ axis of symmetry $0 = \mathcal{Y}$	0 discriminant 0	$y = \frac{0 \pm \sqrt{0^2 - 4(1)(0)}}{2(1)}$ quadratic formula $\frac{(1)\mathcal{Z}}{(0)(1) \pm \mathcal{Z}\sqrt{0^2 - 4(1)(0)}} = \mathcal{Y}$				
x	y																			
0	0																			
1	1																			
1	-1																			
2	1.41																			
2	-1.41																			
coordinate pairs <table border="1" style="display: inline-table;"> <tr><td>x</td><td>y</td></tr> <tr><td>-√5</td><td>0</td></tr> <tr><td>-2</td><td>1</td></tr> <tr><td>-1</td><td>4</td></tr> <tr><td>0</td><td>5</td></tr> <tr><td>1</td><td>4</td></tr> <tr><td>2</td><td>1</td></tr> <tr><td>√5</td><td>0</td></tr> </table>	x	y	-√5	0	-2	1	-1	4	0	5	1	4	2	1	√5	0	$(0, 5)$ vertex $(\mathcal{S}, 0)$	$x = 0$ axis of symmetry $0 = \mathcal{X}$	20 discriminant 20	$x = \frac{0 \pm \sqrt{0^2 - 4(-1)(5)}}{2(-1)}$ quadratic formula $\frac{(1)-\mathcal{Z}}{(\mathcal{S})(1) \pm \mathcal{Z}\sqrt{0^2 - 4(-1)(5)}} = \mathcal{X}$
x	y																			
-√5	0																			
-2	1																			
-1	4																			
0	5																			
1	4																			
2	1																			
√5	0																			
coordinate pairs <table border="1" style="display: inline-table;"> <tr><td>x</td><td>y</td></tr> <tr><td>0</td><td>2</td></tr> <tr><td>0</td><td>-2</td></tr> <tr><td>1</td><td>1.73</td></tr> <tr><td>1</td><td>-1.73</td></tr> <tr><td>2</td><td>1.41</td></tr> <tr><td>2</td><td>-1.41</td></tr> </table>	x	y	0	2	0	-2	1	1.73	1	-1.73	2	1.41	2	-1.41	$(4, 0)$ vertex $(4, 0)$	$y = 0$ axis of symmetry $0 = \mathcal{Y}$	16 discriminant 16	$y = \frac{0 \pm \sqrt{0^2 - 4(-1)(4)}}{2(-1)}$ quadratic formula $\frac{(1)-\mathcal{Z}}{(\mathcal{S})(1) \pm \mathcal{Z}\sqrt{0^2 - 4(-1)(4)}} = \mathcal{Y}$		
x	y																			
0	2																			
0	-2																			
1	1.73																			
1	-1.73																			
2	1.41																			
2	-1.41																			
coordinate pairs <table border="1" style="display: inline-table;"> <tr><td>x</td><td>y</td></tr> <tr><td>-2</td><td>-3</td></tr> <tr><td>-1</td><td>0</td></tr> <tr><td>0</td><td>1</td></tr> <tr><td>1</td><td>0</td></tr> <tr><td>2</td><td>-3</td></tr> </table>	x	y	-2	-3	-1	0	0	1	1	0	2	-3	$(0, 1)$ vertex $(\mathcal{I}, 0)$	$x = 0$ axis of symmetry $0 = \mathcal{X}$	4 discriminant 4	$x = \frac{0 \pm \sqrt{0^2 - 4(-1)(1)}}{2(-1)}$ quadratic formula $\frac{(1)-\mathcal{Z}}{(\mathcal{S})(1) \pm \mathcal{Z}\sqrt{0^2 - 4(-1)(1)}} = \mathcal{X}$				
x	y																			
-2	-3																			
-1	0																			
0	1																			
1	0																			
2	-3																			

The Algebra Game: Quadratic Equations Matching Card Sets

Deck C, Basic Set				
Graph	Factors	Roots	Equation	Standard Form
	$(x - 3)(x + 1)$ factors $(1 + x)(3 - x)$	$x = +3, x = -1$ roots $1 = x = +3, x = -1$	$y = x^2 - 2x - 3$ equation $3 - 2x - 3 = y = x^2 - 2x - 3$	$x^2 - 2x - y - 3 = 0$ standard form $0 = 3 - 3 - y - 2x - 3 = x^2 - 2x - y - 3$
	$(x - 1)(x + 3)$ factors $(3 + x)(1 - x)$	$x = -3, x = +1$ roots $1 + = x = -3, x = +1$	$x^2 + 2x - 3 = y$ equation $y = 3 - 2x + x^2$	$x^2 + 2x - y - 3 = 0$ standard form $0 = 3 - 3 - y - 2x - 3 = x^2 + 2x - y - 3$
	$(x + 4)(-x - 1)$ factors $(1 - x - 4)(-x + x)$	$x = -4, x = -1$ roots $1 = -4, x = -1$	$y = -x^2 - 5x - 4$ equation $y = -x^2 - 5x - 4$	$x^2 + 5x + y + 4 = 0$ standard form $0 = 4 - 4 - 5x - 4 = x^2 + 5x + y + 4$
	$(-x + 3)(x + 1)$ factors $(1 + x)(3 - x)$	$x = -1, x = +3$ roots $x = -1, x = +3$	$-x^2 + 2x + 3 = y$ equation $y = -x^2 + 2x + 3$	$x^2 - 2x + y - 3 = 0$ standard form $x^2 - 2x + y - 3 = 0$

Deck C, Basic	Deck G, Advanced Set															
Coordinate Pair	Vertex	Axis of Symmetry	Discriminant	Quadratic Formula												
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-1</td><td>0</td></tr> <tr><td>0</td><td>-3</td></tr> <tr><td>1</td><td>-4</td></tr> <tr><td>2</td><td>-3</td></tr> <tr><td>3</td><td>0</td></tr> </table>	x	y	-1	0	0	-3	1	-4	2	-3	3	0	$(1, -4)$ vertex $(1, -4)$	$x = 1$ axis of symmetry $1 = x$	16 discriminant 16	$x = \frac{2 \pm \sqrt{(-2)^2 - 4(1)(-3)}}{2(1)}$ quadratic formula $x = \frac{2 \pm \sqrt{4 - 4(-3)}}{2} = x$
x	y															
-1	0															
0	-3															
1	-4															
2	-3															
3	0															
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-3</td><td>0</td></tr> <tr><td>-2</td><td>-3</td></tr> <tr><td>-1</td><td>-4</td></tr> <tr><td>0</td><td>-3</td></tr> <tr><td>1</td><td>0</td></tr> </table>	x	y	-3	0	-2	-3	-1	-4	0	-3	1	0	$(-1, -4)$ vertex $(-1, -4)$	$x = -1$ axis of symmetry $-1 = x$	16 discriminant 16	$x = \frac{-2 \pm \sqrt{2^2 - 4(1)(-3)}}{2(1)}$ quadratic formula $x = \frac{-2 \pm \sqrt{4 - 4(-3)}}{2} = x$
x	y															
-3	0															
-2	-3															
-1	-4															
0	-3															
1	0															
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-5</td><td>-4</td></tr> <tr><td>-4</td><td>0</td></tr> <tr><td>-2.5</td><td>2.25</td></tr> <tr><td>-1</td><td>0</td></tr> <tr><td>0</td><td>-4</td></tr> </table>	x	y	-5	-4	-4	0	-2.5	2.25	-1	0	0	-4	$(-2.5, 2.25)$ vertex $(-2.5, 2.25)$	$x = -2.5$ axis of symmetry $-2.5 = x$	9 discriminant 9	$x = \frac{5 \pm \sqrt{(-5)^2 - 4(-1)(-4)}}{2(-1)}$ quadratic formula $x = \frac{5 \pm \sqrt{25 - 4(-1)(-4)}}{-2} = x$
x	y															
-5	-4															
-4	0															
-2.5	2.25															
-1	0															
0	-4															
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-1</td><td>0</td></tr> <tr><td>0</td><td>3</td></tr> <tr><td>1</td><td>4</td></tr> <tr><td>2</td><td>3</td></tr> <tr><td>3</td><td>0</td></tr> </table>	x	y	-1	0	0	3	1	4	2	3	3	0	$(1, 4)$ vertex $(1, 4)$	$x = 1$ axis of symmetry $1 = x$	16 discriminant 16	$x = \frac{-2 \pm \sqrt{2^2 - 4(-1)(3)}}{2(-1)}$ quadratic formula $x = \frac{-2 \pm \sqrt{4 - 4(-1)(3)}}{-2} = x$
x	y															
-1	0															
0	3															
1	4															
2	3															
3	0															

The Algebra Game: Quadratic Equations Matching Card Sets

Deck C, Basic Set (cont.)				
Graph	Factors	Roots	Equation	Standard Form
	$(x)(x-5)$ factors $(-x)(x)$	$x=0, x=+5$ roots $5+=x, 0=x$	$y=x^2-5x$ equation $y=x^2-5x$	$x^2-5x-y=0$ standard form $0=x^2-5x-y$
	$(x-1)(-x+4)$ factors $(4)(-x+1)$	$x=+4, x=+1$ roots $1+=x, 4+=x$	$y=-x^2+5x-4$ equation $y=-x^2+5x-4$	$x^2-5x+y+4=0$ standard form $0=x^2-5x+y+4$
	$2x(x-3)$ factors $(3)(-x)$	$x=+3, x=0$ roots $0=x, 3+=x$	$2x^2-6x=y$ equation $2x^2-6x=y$	$2x^2-6x-y=0$ standard form $0=2x^2-6x-y$
	$(x-4)(x-1)$ factors $(-1)(x-4)$	$x=+1, x=+4$ roots $1+=x, 4+=x$	$x^2-5x+4=y$ equation $x^2-5x+4=y$	$x^2-5x-y+4=0$ standard form $0=x^2-5x-y+4$

Deck C, Basic	Deck G, Advanced Set (cont.)																			
Coordinate Pair	Vertex	Axis of Symmetry	Discriminant	Quadratic Formula																
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>-4</td></tr> <tr><td>2</td><td>-6</td></tr> <tr><td>2.5</td><td>-6.25</td></tr> <tr><td>3</td><td>-6</td></tr> <tr><td>4</td><td>-4</td></tr> <tr><td>5</td><td>0</td></tr> </table>	x	y	0	0	1	-4	2	-6	2.5	-6.25	3	-6	4	-4	5	0	$(2.5, -6.25)$ vertex $(2.5, -6.25)$	$x=2.5$ axis of symmetry $2.5=x$	25 discriminant 25	$x = \frac{5 \pm \sqrt{(-5)^2 - 4(1)(0)}}{2(1)}$ quadratic formula $x = \frac{(1) \pm \sqrt{(-5)^2 - 4(1)(0)}}{2(1)}$
x	y																			
0	0																			
1	-4																			
2	-6																			
2.5	-6.25																			
3	-6																			
4	-4																			
5	0																			
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>0</td><td>-4</td></tr> <tr><td>1</td><td>0</td></tr> <tr><td>2</td><td>2</td></tr> <tr><td>2.5</td><td>2.25</td></tr> <tr><td>3</td><td>2</td></tr> <tr><td>4</td><td>0</td></tr> <tr><td>5</td><td>-4</td></tr> </table>	x	y	0	-4	1	0	2	2	2.5	2.25	3	2	4	0	5	-4	$(2.5, 2.25)$ vertex $(2.5, 2.25)$	$x=2.5$ axis of symmetry $2.5=x$	9 discriminant 9	$x = \frac{-5 \pm \sqrt{5^2 - 4(-1)(-4)}}{2(-1)}$ quadratic formula $x = \frac{(1) \pm \sqrt{(-5)^2 - 4(-1)(-4)}}{2(-1)}$
x	y																			
0	-4																			
1	0																			
2	2																			
2.5	2.25																			
3	2																			
4	0																			
5	-4																			
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>-4</td></tr> <tr><td>1.5</td><td>-4.5</td></tr> <tr><td>2</td><td>-4</td></tr> <tr><td>3</td><td>0</td></tr> </table>	x	y	0	0	1	-4	1.5	-4.5	2	-4	3	0	$(1.5, -4.5)$ vertex $(1.5, -4.5)$	$x=1.5$ axis of symmetry $1.5=x$	36 discriminant 36	$x = \frac{6 \pm \sqrt{(-6)^2 - 4(2)(0)}}{2(2)}$ quadratic formula $x = \frac{(2) \pm \sqrt{(-6)^2 - 4(2)(0)}}{2(2)}$				
x	y																			
0	0																			
1	-4																			
1.5	-4.5																			
2	-4																			
3	0																			
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>0</td><td>4</td></tr> <tr><td>1</td><td>0</td></tr> <tr><td>2</td><td>-2</td></tr> <tr><td>2.5</td><td>-2.25</td></tr> <tr><td>3</td><td>-2</td></tr> <tr><td>4</td><td>0</td></tr> <tr><td>5</td><td>4</td></tr> </table>	x	y	0	4	1	0	2	-2	2.5	-2.25	3	-2	4	0	5	4	$(2.5, -2.25)$ vertex $(2.5, -2.25)$	$x=2.5$ axis of symmetry $2.5=x$	9 discriminant 9	$x = \frac{5 \pm \sqrt{(-5)^2 - 4(1)(4)}}{2(1)}$ quadratic formula $x = \frac{(1) \pm \sqrt{(-5)^2 - 4(1)(4)}}{2(1)}$
x	y																			
0	4																			
1	0																			
2	-2																			
2.5	-2.25																			
3	-2																			
4	0																			
5	4																			

The Algebra Game: Quadratic Equations Matching Card Sets

Deck C, Basic Set (cont.)				
Graph	Factors	Roots	Equation	Standard Form
	$x(x - 3)$ factors $(x - 3)x$	$x = 0, x = +3$ roots $x = 0, x = 3$	$y = x^2 - 3x$ equation $y = x^2 - 3x$	$x^2 - 3x - y = 0$ standard form $0 = y - x^2 - 3x$
	$(x - \frac{1}{2})(x - \frac{3}{2})$ factors $(\frac{1}{2}x - \frac{1}{4})(x - \frac{3}{2})$	$x = \frac{1}{2}, x = \frac{3}{2}$ roots $x = \frac{1}{2}, x = \frac{3}{2}$	$x^2 + x + 1 = y$ equation $y = 1 + x + x^2$	$x^2 + x - y + 1 = 0$ standard form $0 = 1 + y - x + x^2$
	$(x + 2i)(x - 2i)$ factors $(x - 2i)(x + 2i)$	$x = +2i, x = -2i$ roots $x = +2i, x = -2i$	$y = x^2 + 4$ equation $y = x^2 + 4$	$x^2 - y + 4 = 0$ standard form $0 = 4 + y - x^2$
	$(x - \frac{1}{2})(x - \frac{3}{2})$ factors $(\frac{1}{2}x - \frac{1}{4})(x - \frac{3}{2})$	$x = \frac{1}{2}, x = \frac{3}{2}$ roots $x = \frac{1}{2}, x = \frac{3}{2}$	$-2x^2 + 3x - 2 = y$ equation $y = -2x^2 + 3x - 2$	$2x^2 - 3x + y + 2 = 0$ standard form $0 = 2 + y - 3x + 2x^2$

Deck C, Basic	Deck G, Advanced Set (cont.)																			
Coordinate Pair	Vertex	Axis of Symmetry	Discriminant	Quadratic Formula																
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>-2</td></tr> <tr><td>1.5</td><td>-2.25</td></tr> <tr><td>2</td><td>-2</td></tr> <tr><td>3</td><td>0</td></tr> </table>	x	y	0	0	1	-2	1.5	-2.25	2	-2	3	0	$(1.5, -2.25)$ vertex $(1.5, -2.25)$	$x = 1.5$ axis of symmetry $x = 1.5$	9 discriminant 9	$x = \frac{3 \pm \sqrt{(-3)^2 - 4(1)(0)}}{2(1)}$ quadratic formula $x = \frac{3 \pm \sqrt{9}}{2} = x$				
x	y																			
0	0																			
1	-2																			
1.5	-2.25																			
2	-2																			
3	0																			
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-2</td><td>3</td></tr> <tr><td>-1</td><td>1</td></tr> <tr><td>-0.5</td><td>0.75</td></tr> <tr><td>0</td><td>1</td></tr> <tr><td>1</td><td>3</td></tr> </table>	x	y	-2	3	-1	1	-0.5	0.75	0	1	1	3	$(-0.5, 0.75)$ vertex $(-0.5, 0.75)$	$x = -0.5$ axis of symmetry $x = -0.5$	-3 discriminant -3	$x = \frac{-1 \pm \sqrt{1^2 - 4(1)(1)}}{2(1)}$ quadratic formula $x = \frac{-1 \pm \sqrt{1 - 4}}{2} = x$				
x	y																			
-2	3																			
-1	1																			
-0.5	0.75																			
0	1																			
1	3																			
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-2</td><td>8</td></tr> <tr><td>-1</td><td>5</td></tr> <tr><td>0</td><td>4</td></tr> <tr><td>1</td><td>5</td></tr> <tr><td>2</td><td>8</td></tr> </table>	x	y	-2	8	-1	5	0	4	1	5	2	8	$(0, 4)$ vertex $(0, 4)$	$x = 0$ axis of symmetry $x = 0$	-16 discriminant -16	$x = \frac{0 \pm \sqrt{0^2 - 4(1)(4)}}{2(1)}$ quadratic formula $x = \frac{0 \pm \sqrt{0 - 16}}{2} = x$				
x	y																			
-2	8																			
-1	5																			
0	4																			
1	5																			
2	8																			
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-1</td><td>-7</td></tr> <tr><td>0</td><td>-2</td></tr> <tr><td>0.5</td><td>-1</td></tr> <tr><td>0.75</td><td>-0.875</td></tr> <tr><td>1</td><td>-1</td></tr> <tr><td>1.5</td><td>-2</td></tr> <tr><td>2.5</td><td>-7</td></tr> </table>	x	y	-1	-7	0	-2	0.5	-1	0.75	-0.875	1	-1	1.5	-2	2.5	-7	$(0.75, -0.875)$ vertex $(0.75, -0.875)$	$x = 0.75$ axis of symmetry $x = 0.75$	-7 discriminant -7	$x = \frac{-3 \pm \sqrt{3^2 - 4(-2)(-2)}}{2(-2)}$ quadratic formula $x = \frac{-3 \pm \sqrt{9 - 16}}{-4} = x$
x	y																			
-1	-7																			
0	-2																			
0.5	-1																			
0.75	-0.875																			
1	-1																			
1.5	-2																			
2.5	-7																			

The Algebra Game: Quadratic Equations Matching Card Sets

Deck D, Basic Set				
Graph	Factors	Roots	Equation	Standard Form
	$\frac{1}{2}(x)(x)$ factors $(x)(x)\frac{z}{1}$	$x = 0$ roots $0 = x$	$y = \frac{1}{2}x^2$ equation $z\frac{z}{1} = y$	$x^2 - 2y = 0$ standard form $0 = yz - z^2x$
	$2(x)(x)$ factors $(x)(x)z$	$x = 0$ roots $0 = x$	$y = 2x^2$ equation $z^2x = y$	$2x^2 - y = 0$ standard form $0 = y - z^2x$
	$2(x + \sqrt{2})(x - \sqrt{2})$ factors $2(x + \sqrt{2})(x - \sqrt{2})$	$x = -\sqrt{2}, x = +\sqrt{2}$ roots $x = -\sqrt{2}, x = +\sqrt{2}$	$y = 2x^2 - 4$ equation $y = 2x^2 - 4$	$2x^2 - y - 4 = 0$ standard form $2x^2 - y - 4 = 0$
	$(2x + 1)(x - 3)$ factors $(2x + 1)(x - 3)$	$x = +3, x = -0.5$ roots $x = +3, x = -0.5$	$y = 2x^2 - 5x - 3$ equation $y = 2x^2 - 5x - 3$	$2x^2 - 5x - y - 3 = 0$ standard form $2x^2 - 5x - y - 3 = 0$

Deck D, Basic	Deck H, Advanced Set (cont.)															
Coordinate Pair	Vertex	Axis of Symmetry	Discriminant	Quadratic Formula												
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-2</td><td>2</td></tr> <tr><td>-1</td><td>0.5</td></tr> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>0.5</td></tr> <tr><td>2</td><td>2</td></tr> </table>	x	y	-2	2	-1	0.5	0	0	1	0.5	2	2	$(0, 0)$ vertex $(0, 0)$	$x = 0$ axis of symmetry $0 = x$	0 discriminant 0	$x = \frac{0 \pm \sqrt{0^2 - 4(0.5)(0)}}{2(0.5)}$ quadratic formula $\frac{(0.5)z}{(0)(0.5)(0)} = x$
x	y															
-2	2															
-1	0.5															
0	0															
1	0.5															
2	2															
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-2</td><td>8</td></tr> <tr><td>-1</td><td>2</td></tr> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>2</td></tr> <tr><td>2</td><td>8</td></tr> </table>	x	y	-2	8	-1	2	0	0	1	2	2	8	$(0, 0)$ vertex $(0, 0)$	$x = 0$ axis of symmetry $0 = x$	0 discriminant 0	$x = \frac{0 \pm \sqrt{0^2 - 4(2)(0)}}{2(2)}$ quadratic formula $\frac{(2)z}{(0)(2)(0)} = x$
x	y															
-2	8															
-1	2															
0	0															
1	2															
2	8															
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-2</td><td>4</td></tr> <tr><td>-1</td><td>-2</td></tr> <tr><td>0</td><td>-4</td></tr> <tr><td>1</td><td>-2</td></tr> <tr><td>2</td><td>4</td></tr> </table>	x	y	-2	4	-1	-2	0	-4	1	-2	2	4	$(0, -4)$ vertex $(0, -4)$	$x = 0$ axis of symmetry $0 = x$	32 discriminant 32	$x = \frac{0 \pm \sqrt{0^2 - 4(2)(-4)}}{2(2)}$ quadratic formula $\frac{(2)z}{(-4)(2)(-4)} = x$
x	y															
-2	4															
-1	-2															
0	-4															
1	-2															
2	4															
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-0.5</td><td>0</td></tr> <tr><td>1.0</td><td>-6</td></tr> <tr><td>1.25</td><td>-6.125</td></tr> <tr><td>1.5</td><td>-6</td></tr> <tr><td>3.0</td><td>0</td></tr> </table>	x	y	-0.5	0	1.0	-6	1.25	-6.125	1.5	-6	3.0	0	$(1.25, -6.125)$ vertex $(1.25, -6.125)$	$x = 1.25$ axis of symmetry $x = 1.25$	49 discriminant 49	$x = \frac{5 \pm \sqrt{(-5)^2 - 4(2)(-3)}}{2(2)}$ quadratic formula $\frac{(2)z}{5 \pm \sqrt{(-5)^2 - 4(2)(-3)}} = x$
x	y															
-0.5	0															
1.0	-6															
1.25	-6.125															
1.5	-6															
3.0	0															

The Algebra Game: Quadratic Equations Matching Card Sets

Deck D, Basic Set (cont.)				
Graph	Factors	Roots	Equation	Standard Form
	$4(x)(x)$ factors $(x)(x)4$	$x = 0$ roots $0 = x$	$y = 4x^2$ equation $4x^2 = y$	$4x^2 - y = 0$ standard form $0 = y - 4x^2$
	$4(x + 0.5)(x + 0.5)$ factors $4(x + 0.5)(x + 0.5)$	$x = -0.5$ factors $x = -0.5$	$y = 4x^2 + 4x + 1$ equation $1 + 4x^2 = y$	$4x^2 + 4x - y + 1 = 0$ standard form $0 = 1 + 4x - y + 4x^2$
	$4(x - 0.5)(x - 0.5)$ factors $4(x - 0.5)(x - 0.5)$	$x = 0.5$ roots $0.5 = x$	$y = 4x^2 - 4x + 1$ equation $1 + 4x^2 = y$	$4x^2 - 4x - y + 1 = 0$ standard form $0 = 1 - 4x - y + 4x^2$
	$\frac{1}{4}(x)(x)$ factors $(x)(x)\frac{1}{4}$	$x = 0$ roots $0 = x$	$y = \frac{1}{4}x^2$ equation $\frac{1}{4}x^2 = y$	$x^2 - 4y = 0$ standard form $0 = -4y - x^2$

Deck A, Basic	Deck H, Advanced Set (cont.)															
Coordinate Pair	Vertex	Axis of Symmetry	Discriminant	Quadratic Formula												
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-2</td><td>16</td></tr> <tr><td>-1</td><td>4</td></tr> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>4</td></tr> <tr><td>2</td><td>16</td></tr> </table>	x	y	-2	16	-1	4	0	0	1	4	2	16	$(0, 0)$ vertex $(0, 0)$	$x = 0$ axis of symmetry $0 = x$	0 discriminant 0	$x = \frac{0 \pm \sqrt{0^2 - 4(4)(0)}}{2(4)}$ quadratic formula $\frac{(4)z}{(0)(4) \pm \sqrt{0^2 - 4(4)(0)}} = x$
x	y															
-2	16															
-1	4															
0	0															
1	4															
2	16															
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-1.5</td><td>4</td></tr> <tr><td>-1</td><td>1</td></tr> <tr><td>-0.5</td><td>0</td></tr> <tr><td>0</td><td>1</td></tr> <tr><td>0.5</td><td>4</td></tr> </table>	x	y	-1.5	4	-1	1	-0.5	0	0	1	0.5	4	$(-0.5, 0)$ vertex $(-0.5, 0)$	$x = -0.5$ axis of symmetry $5.0 = -x$	0 discriminant 0	$x = \frac{-4 \pm \sqrt{4^2 - 4(4)(1)}}{2(4)}$ quadratic formula $\frac{(4)z}{(1)(4) \pm \sqrt{4^2 - 4(4)(1)}} = x$
x	y															
-1.5	4															
-1	1															
-0.5	0															
0	1															
0.5	4															
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-0.5</td><td>4</td></tr> <tr><td>0</td><td>1</td></tr> <tr><td>0.5</td><td>0</td></tr> <tr><td>1</td><td>1</td></tr> <tr><td>1.5</td><td>4</td></tr> </table>	x	y	-0.5	4	0	1	0.5	0	1	1	1.5	4	$(0.5, 0)$ vertex $(0.5, 0)$	$x = 0.5$ axis of symmetry $5.0 = x$	0 discriminant 0	$x = \frac{4 \pm \sqrt{(-4)^2 - 4(4)(1)}}{2(4)}$ quadratic formula $\frac{(4)z}{(1)(4) \pm \sqrt{(-4)^2 - 4(4)(1)}} = x$
x	y															
-0.5	4															
0	1															
0.5	0															
1	1															
1.5	4															
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-2</td><td>1</td></tr> <tr><td>-1</td><td>0.25</td></tr> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>0.25</td></tr> <tr><td>2</td><td>1</td></tr> </table>	x	y	-2	1	-1	0.25	0	0	1	0.25	2	1	$(0, 0)$ vertex $(0, 0)$	$x = 0$ axis of symmetry $0 = x$	0 discriminant 0	$x = \frac{0 \pm \sqrt{0^2 - 4(0.25)(0)}}{2(0.25)}$ quadratic formula $\frac{(2)(0)z}{(0)(0.25) \pm \sqrt{0^2 - 4(0.25)(0)}} = x$
x	y															
-2	1															
-1	0.25															
0	0															
1	0.25															
2	1															

The Algebra Game: Quadratic Equations Matching Card Sets

Deck D, Basic Set (cont.)				
Graph	Factors	Roots	Equation	Standard Form
	$3(x)(x)$ factors $(x)(x) \times 3$	$x = 0$ roots $0 = x$	$y = 3x^2$ equation $z^2 \times 3 = y$	$3x^2 - y = 0$ standard form $0 = y - 3x^2$
	$(3x + 2)(x + 2)$ factors $(2 + x)(2 + 3x)$	$x = -2, x = -\frac{2}{3}$ roots $\frac{-2}{3} = -x, x = -2$	$y = 3x^2 + 8x + 4$ equation $4 + 8x + 3x^2 = y$	$3x^2 + 8x - y + 4 = 0$ standard form $3x^2 + 8x - y + 4 = 0$
	$3(x + 0.5)(x - 0.5)$ factors $3(x + 0.5)(x - 0.5)$	$x = -0.5, x = +0.5$ roots $x = -0.5, x = +0.5$	$y = 3x^2 - 0.75$ equation $5x^2 - 0.75 = y$	$3x^2 - y - 0.75 = 0$ standard form $0 = 3x^2 - y - 0.75$
	$\frac{1}{3}(x)(x)$ factors $(x)(x) \times \frac{1}{3}$	$x = 0$ roots $0 = x$	$y = \frac{1}{3}x^2$ equation $z^2 \times \frac{1}{3} = y$	$x^2 - 3y = 0$ standard form $0 = y - \frac{1}{3}x^2$

Deck D, Basic	Deck H, Advanced Set (cont.)																			
Coordinate Pair	Vertex	Axis of Symmetry	Discriminant	Quadratic Formula																
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-2</td><td>12</td></tr> <tr><td>-1</td><td>3</td></tr> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>3</td></tr> <tr><td>2</td><td>12</td></tr> </table>	x	y	-2	12	-1	3	0	0	1	3	2	12	$(0, 0)$ vertex $(0, 0)$	$x = 0$ axis of symmetry $0 = x$	0 discriminant 0	$x = \frac{0 \pm \sqrt{0^2 - 4(3)(0)}}{2(3)}$ quadratic formula $\frac{(3)z}{(0)(3) \mp z \pm 0 \sqrt{0^2 - 4(3)(0)}} = x$				
x	y																			
-2	12																			
-1	3																			
0	0																			
1	3																			
2	12																			
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>$-2\frac{2}{3}$</td><td>4</td></tr> <tr><td>-2</td><td>0</td></tr> <tr><td>-1</td><td>-1</td></tr> <tr><td>$-\frac{2}{3}$</td><td>0</td></tr> <tr><td>0</td><td>4</td></tr> </table>	x	y	$-2\frac{2}{3}$	4	-2	0	-1	-1	$-\frac{2}{3}$	0	0	4	$(-\frac{4}{3}, -\frac{4}{3})$ vertex $(-\frac{3}{4}, -\frac{3}{4})$	$x = -\frac{4}{3}$ axis of symmetry $\frac{3}{4} = -x$	16 discriminant 16	$x = \frac{-8 \pm \sqrt{8^2 - 4(3)(4)}}{2(3)}$ quadratic formula $\frac{(3)z}{(4)(3) \mp 8 \pm \sqrt{8^2 - 4(3)(4)}} = x$				
x	y																			
$-2\frac{2}{3}$	4																			
-2	0																			
-1	-1																			
$-\frac{2}{3}$	0																			
0	4																			
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-1</td><td>2.25</td></tr> <tr><td>-0.5</td><td>0</td></tr> <tr><td>0</td><td>-0.75</td></tr> <tr><td>0.5</td><td>0</td></tr> <tr><td>1</td><td>2.25</td></tr> </table>	x	y	-1	2.25	-0.5	0	0	-0.75	0.5	0	1	2.25	$(0, -0.75)$ vertex $(0, -0.75)$	$x = 0$ axis of symmetry $0 = x$	9 discriminant 9	$x = \frac{0 \pm \sqrt{0^2 - 4(3)(0.75)}}{2(3)}$ quadratic formula $\frac{(3)z}{(0)(3) \mp 0 \pm \sqrt{0^2 - 4(3)(0.75)}} = x$				
x	y																			
-1	2.25																			
-0.5	0																			
0	-0.75																			
0.5	0																			
1	2.25																			
coordinate pairs <table border="1"> <tr><td>x</td><td>y</td></tr> <tr><td>-3</td><td>3</td></tr> <tr><td>-2</td><td>$1\frac{1}{3}$</td></tr> <tr><td>-1</td><td>$\frac{1}{3}$</td></tr> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>$\frac{1}{3}$</td></tr> <tr><td>2</td><td>$1\frac{1}{3}$</td></tr> <tr><td>3</td><td>3</td></tr> </table>	x	y	-3	3	-2	$1\frac{1}{3}$	-1	$\frac{1}{3}$	0	0	1	$\frac{1}{3}$	2	$1\frac{1}{3}$	3	3	$(0, 0)$ vertex $(0, 0)$	$x = 0$ axis of symmetry $0 = x$	0 discriminant 0	$x = \frac{0 \pm \sqrt{0^2 - 4(\frac{1}{3})(0)}}{2(\frac{1}{3})}$ quadratic formula $\frac{(\frac{1}{3})z}{(0)(\frac{1}{3}) \mp 0 \pm \sqrt{0^2 - 4(\frac{1}{3})(0)}} = x$
x	y																			
-3	3																			
-2	$1\frac{1}{3}$																			
-1	$\frac{1}{3}$																			
0	0																			
1	$\frac{1}{3}$																			
2	$1\frac{1}{3}$																			
3	3																			