

## (A) Lesson Objectives

- Review factoring of simple quadratic expressions ( $a = 1$ , diff of squares)
- Review the solving of simple quadratic equations
- Review the graphing of quadratic functions by hand and by technology
- Understand the connection amongst factoring, solving, & graphing

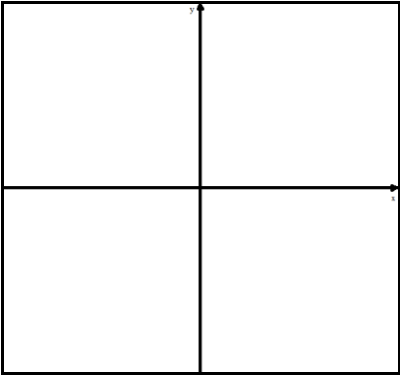
## (B) Zero Product Property

If the product of two variables is zero, then .....

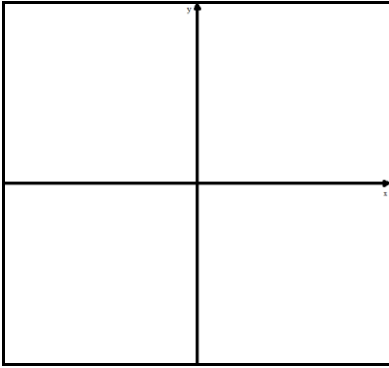
If  $a \times b = 0$ , then .....

## (C) Examples (to illustrate factoring, solving, graphing & connection)

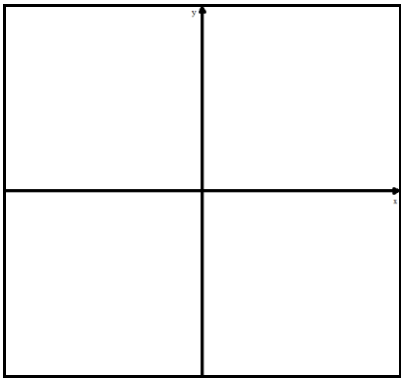
- Given the quadratic expression  $x^2 - x - 6$

Factor $x^2 - x - 6$	Solve $x^2 - x - 6 = 0$	Graph $f(x) = x^2 - x - 6$ 	Window settings Xmin = _____ Xmax = _____ Ymin = _____ Ymax = _____
Axis of Symmetry:	Vertex:		

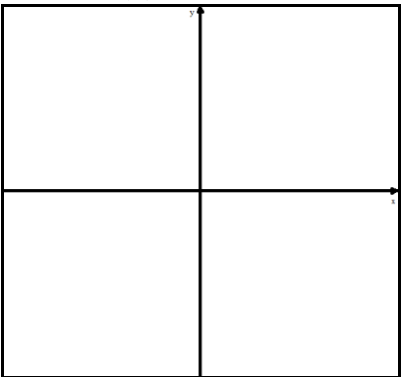
- Given the quadratic expression  $2x^2 + 8x - 24$

Factor $2x^2 + 8x - 24$	Solve $2x^2 + 8x - 24 = 0$	Graph $g(x) = 2x^2 + 8x - 24$ 	Window settings Xmin = _____ Xmax = _____ Ymin = _____ Ymax = _____
Axis of Symmetry:	Vertex:		

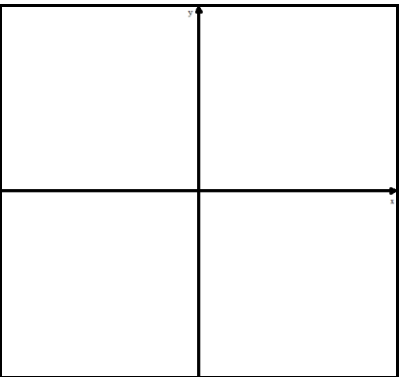
c. Given the quadratic expression  $x^2 - 16$

Factor $x^2 - 16$	Solve $x^2 - 16 = 0$	Graph $f(x) = x^2 - 16$ 	Window settings Xmin = _____ Xmax = _____ Ymin = _____ Ymax = _____
Axis of Symmetry:	Vertex:		

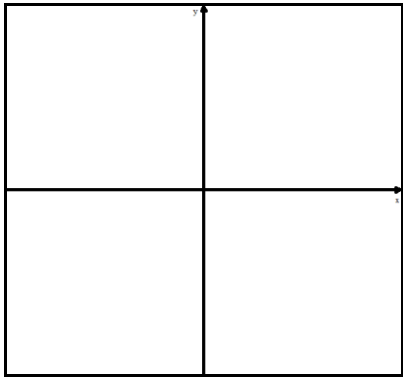
d. Given the quadratic expression  $9 - 4x^2$

Factor $9 - 4x^2$	Solve $9 - 4x^2 = 0$	Graph $f(x) = 9 - 4x^2$ 	Window settings Xmin = _____ Xmax = _____ Ymin = _____ Ymax = _____
Axis of Symmetry:	Vertex:		

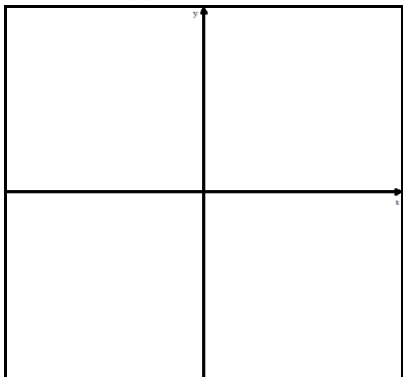
e. Given the quadratic expression  $3x^2 - 6x - 9$

Factor $3x^2 - 6x - 9$	Solve $3x^2 - 6x = 9$	Graph $f(x) = 3x^2 - 6x - 9$ 	Window settings Xmin = _____ Xmax = _____ Ymin = _____ Ymax = _____
Axis of Symmetry:	Vertex:		

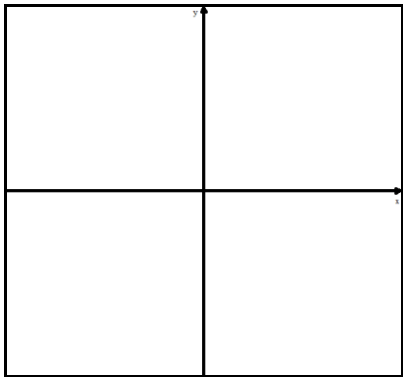
f. Given the quadratic expression  $x^2 - 8x + 16$

Factor $x^2 - 8x + 16$	Solve $0 = x^2 - 8x + 16$	Graph $f(x) = x^2 - 8x + 16$ 	Window settings
Axis of Symmetry:	Vertex:		Xmin = _____.
			Xmax = _____.
			Ymin = _____.
			Ymax = _____.

g. Given the quadratic expression  $x^2 + 2x - 5$

Factor $x^2 + 2x - 5$	Solve $x^2 = -2x + 5$	Graph $f(x) = x^2 + 2x - 5$ 	Window settings
Axis of Symmetry:	Vertex:		Xmin = _____.
			Xmax = _____.
			Ymin = _____.
			Ymax = _____.

h. Given the quadratic expression  $x^2 + 2x + 5$

Factor $x^2 + 2x + 5$	Solve $x^2 = -2x - 5$	Graph $f(x) = x^2 + 2x + 5$ 	Window settings
Axis of Symmetry:	Vertex:		Xmin = _____.
			Xmax = _____.
			Ymin = _____.
			Ymax = _____.