

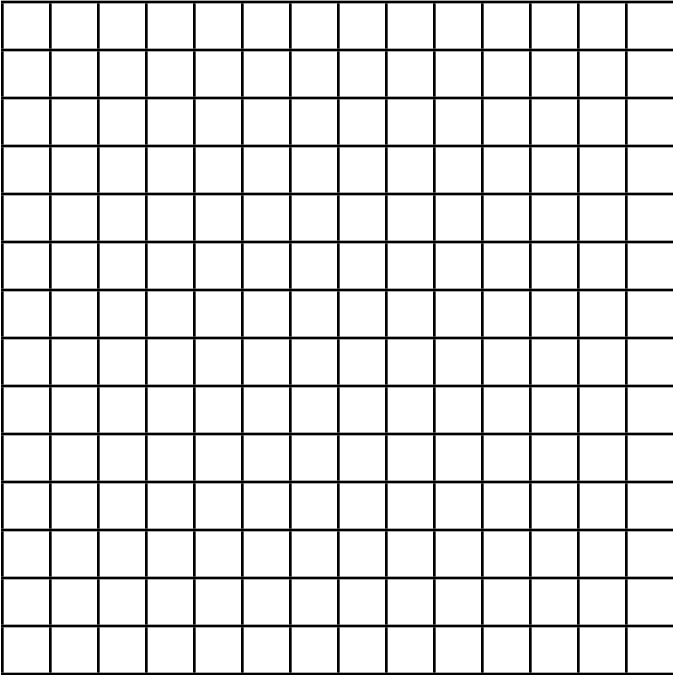
Making Connections:

# Solving Quadratic Equations

Solve the following equation for x...

$$2(x - 3)^2 - 8 = 0$$

Graphically



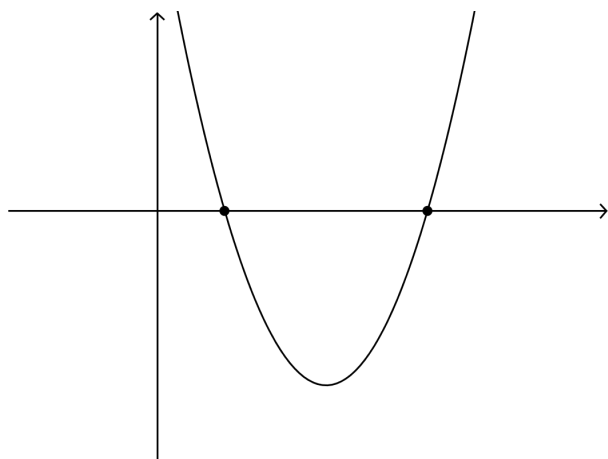
Algebraically

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What connections can you find between these two methods?

To solve for the zeros of a quadratic function expressed in vertex form, solve the following equation for  $x$ :

$$a(x - p)^2 + q = 0$$

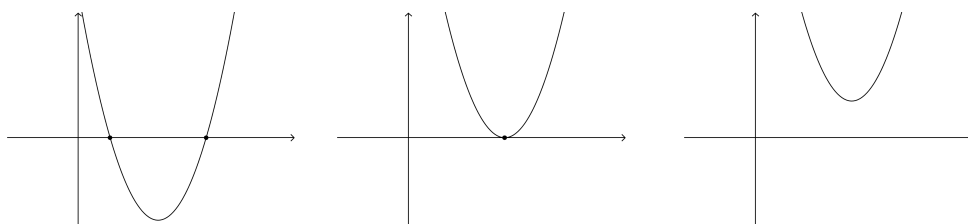


Resulting formula:

$$x =$$

Explain and illustrate the meaning of this formula in terms of the graph of a quadratic function.

Explain and illustrate the nature of the roots of a quadratic function in terms of this formula.



Try these!

$$3(x + 2)^2 = 5$$

$$x^2 - 2x - 15 = 0$$

$$x^2 - 6x - 11 = 0$$