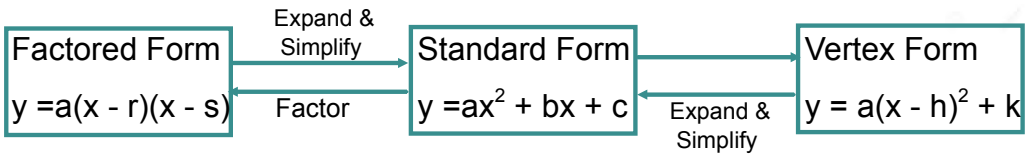
Date: _____

5.5 Solving Problems Using Quadratic Relations



1) How can we get from factored form to vertex form?

2) What about from standard form to vertex form?

3) Can every expression in vertex form be written in factored form?

Finding Zeros Given an Equation in Vertex Form

Think about what we already know. If you have the relation $y = -2(x - 3)^2 + 8$, how can you find its zeros?

Try to use the same process to find the zeros for $y = 2(x - 3)^2 + 8$. What happens?

How can you tell how many zeros a parabola has by looking at a relation in vertex form?

More Practice

1) Determine the values of a and b in $y = ax^2 + bx + 8$ if the vertex is located at (1, 7).

2) A ticket to a school dance is usually $6 and 250 students attend. The social committee knows that for every $1 increase in the price of a ticket, 25 fewer students will attend the dance. Determine a quadratic relation to model the revenue, and then determine the price that maximizes revenue.

3) A quadratic relation $y = -2(x - 5)^2 + 2$ is reflected over the x - axis and translated 4 units left and 5 units down. Write the equation of the resulting relationship in vertex and standard form. How many zeros do you expect this parabola to have?