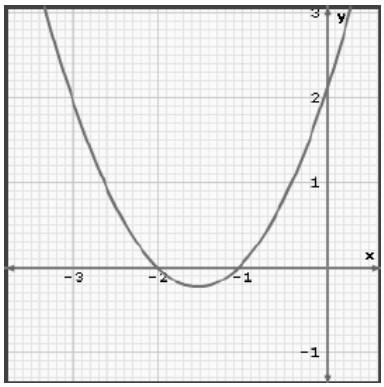
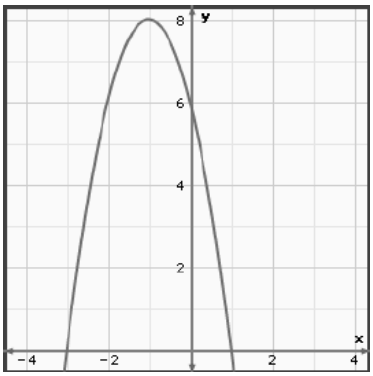
MBF 3C1 Name: _____

Quadratics in Factored Form

State the key features of each graph.

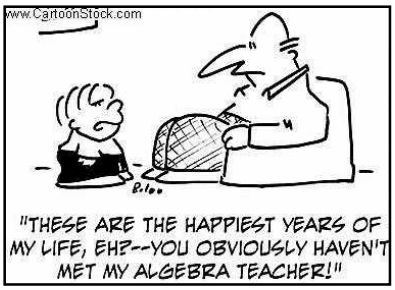
	$y=(x+2)(x+1)$	$y=-2(x+3)(x-1)$
		
zeros		
y-intercept		
vertex		
axis of symmetry		
optimal value		

Compare the equation of each graph to it's key features. What information (about the key features of the parabola) can you take from this form of equation?

- An equation in **factored form,** _____, tells the location of the _____.
  (The zeros must be removed from the brackets: $x-r=0$ and $x-t=0$)

Factored Form can be converted to **Standard Form** by _____.

$y=3(x-2)(x+1)$



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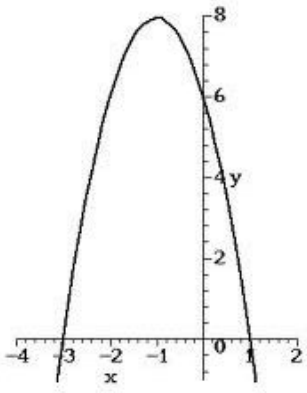
Example 1

a. Factor $y = -3x^2 + 24x - 48$ to find the zeros of the relation.

b. Factor $y = -24x^2 + 6$ to find the zeros of the relation.

c. Factor $y = -4x^2 + 24x$ to find the zeros of the relation.



Example 2

Find the equation of the quadratic in factored form using the picture provided above.

1. State the generalization for a quadratic in factored form.	$y = a(x - r)(x - t)$
2. Substitute the zeros into the generalization for *r* and *t*	
3. Substitute the other point that the parabola passes through into the generalization for (*x*, *y*).	
4. Solve for the variable *a*.	
5. Sub the values for *a*, *r*, and *t* into the generalization for factored form.	