Parabola Extravaganza

…connecting graph, chart values, factoring, quadratic formula, more…

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1. For $y = f(x) = 3(x+2)^2 - 3$ (A) Vertex coordinates are _____

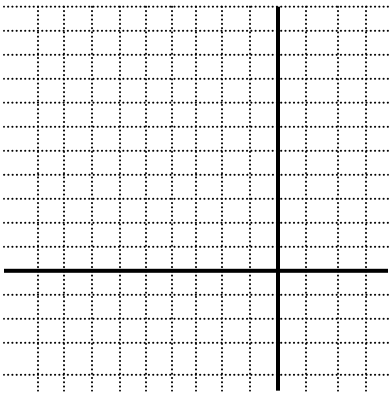
(B) Write vertex coordinates in the MIDDLE of the chart.

(C) Write three consecutive integer values of ***x*** smaller and larger than that of the ***x*** value that you wrote in the chart for the vertex.

(D) Find ***y*** values.

x	***y***

(E) Graph:



(F) Draw and label the axis of symmetry.

(G) Write the equation of the axis of symmetry. _____

(H) Label the vertex <u>on the graph</u> and <u>in the chart</u>.

(I) FOIL to write $y = f(x) = 3(x+2)^2 - 3$ in $y = f(x) = ax^2 + bx + c$ form.

(J) Factor the results of (I).

(K) Set y = 0 and solve.

2. State the quadratic formula, beginning with "Given…"

$\left(-\frac{b}{2a}, f\left(-\frac{b}{2a}\right)\right)$

3. Complete for $y = f(x) = 3x^2 + 12x + 9$	y-intercept	x-intercepts	axis of symmetry	discriminant (# zeroes)	axis-to-answer distance	vertex
Identifier:	0,?	?,0 ??,0	$x = -\frac{b}{2a}$	$b^2 - 4ac$	$\frac{\pm\sqrt{b^2-4ac}}{2a}$	
$a =$ $b =$ $c =$						

4. Solve $y = f(x) = 3x^2 + 12x + 9$ using the quadratic formula. (haha: "done" already)