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6) Go to <http://www.youtube.com/watch?v=vphPafWDZkw>

a) For the function  $y = -3x^2 + 12x + 4$

- I. Find the axis of symmetry and draw it in a graph.
- II. Find the vertex and draw it.
- III. Find the values of  $y$  for  $x = 1$  and  $-1$  and  $2$  and  $-2$
- IV. Draw the function.

b) Graph these functions:

- I.  $3x^2 + 12x + 1$
- II.  $x^2 + x + 4$
- III.  $-x^2 - 5x + 7$
- IV.  $2x^2 - 6x - 1$