- 2. [9 points] The parts of this problem are unrelated.
 - **a**. [6 points] Consider the quadratic function $f(x) = (x-1)^2 1$.
 - (i) Find the zero(s) and vertex of f(x). Show any relevant work.

vertex: _____ zero(s): x = _____

(ii) Find the vertex of f(2x) + 1.

vertex:

(iii) Find the zero(s) of 3f(x-1).

zero(s): x =_____

b. [3 points] A different quadratic function, g(x), has its vertex at (2,3) and a zero at x = -1.

(i) What is the x-coordinate of the other zero of g(x)? (CIRCLE ONE)

0 1 2 3 4 5 none of these not enough information

(ii) What is the sign of the leading coefficient of g(x)? (CIRCLE ONE AND EXPLAIN)

negative positive zero NOT ENOUGH INFORMATION Explanation of (ii):