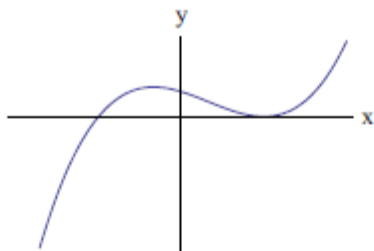


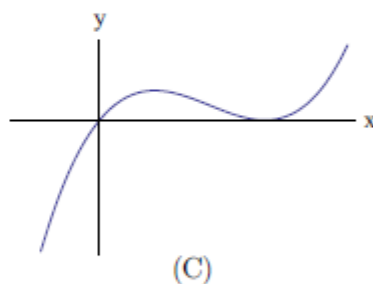
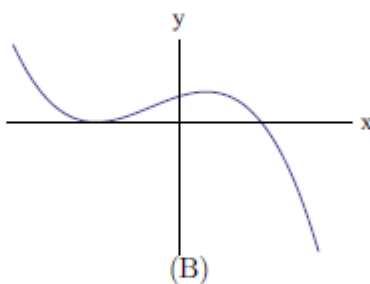
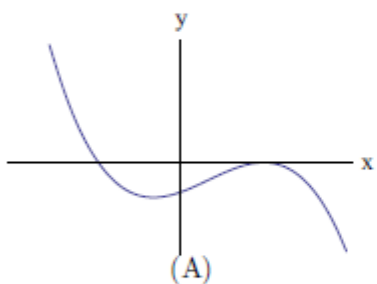
(i) The graph $y = f(x)$ of a certain function has been plotted below.



On the next three pairs of axes (A), (B), (C) are graphs of

$$y = f(-x), \quad f(x-1), \quad -f(x)$$

in some order. Say which axes correspond to which graphs.



(ii) Sketch, on the axes opposite, graphs of *both* of the following functions

$$y = 2^{-x^2} \quad \text{and} \quad y = 2^{2x-x^2}.$$

Carefully label any stationary points.

(iii) Let c be a real number and define the following integral

$$I(c) = \int_0^1 2^{-(x-c)^2} dx.$$

State the value(s) of c for which $I(c)$ is largest. Briefly explain your reasoning.
[Note you are not being asked to calculate this maximum value.]