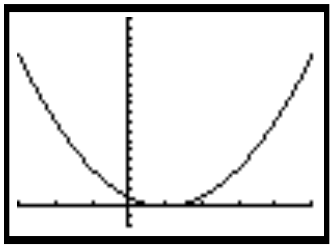
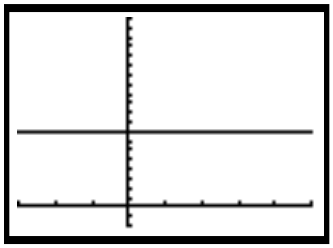
In Class Exercises (ICE) - 10/6/00

The graphs of two functions, f(x) and g(x), are given below. Use the axes provided to sketch graphs of the new functions defined using f(x) and g(x).

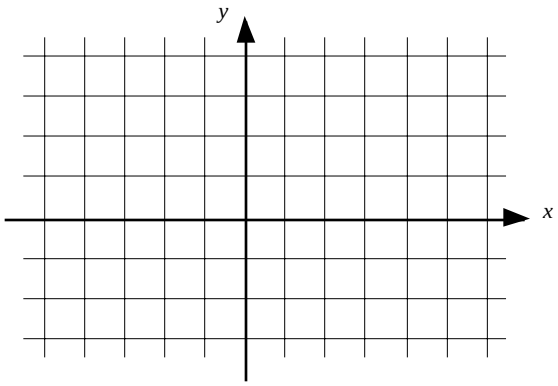


$y = f(x)$

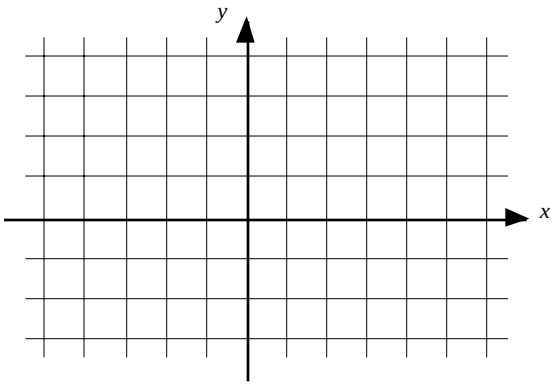


$y = g(x)$

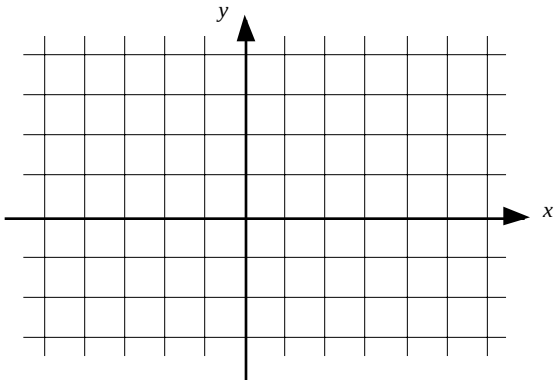
- ***h(x) = f(x) + g(x)***



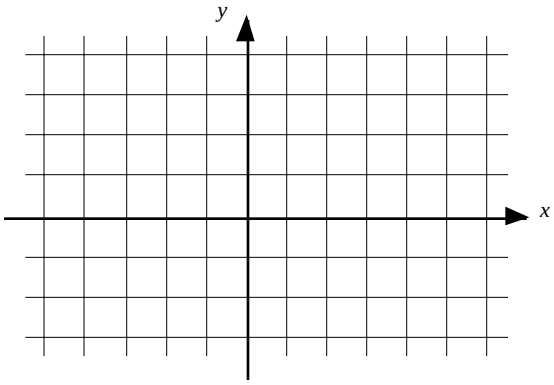
- ***p(x) = f(x)*g(x)***



- ***q(x) = g(x) / f(x)***



- ***w(x) = f(g(x))***



In Class Exercises (ICE) - 10/6/00

The Barry Manilow fan club of Chapel Hill, NC, plan to produce official Barry Manilow T-shirts, and sell them for $7 each. Inquiries to local T-shirt manufacturers indicate that the cost of producing q T-shirts will be given by

$$C(q) = 0.01q^3 - 0.6q^2 + 13q.$$

Assuming that the fan club is somehow able to sell every Barry Manilow T-shirt that they manufacture at a price of $7 per shirt, how many T-shirts should they produce if they want to maximize profits? What will be their maximum profit?