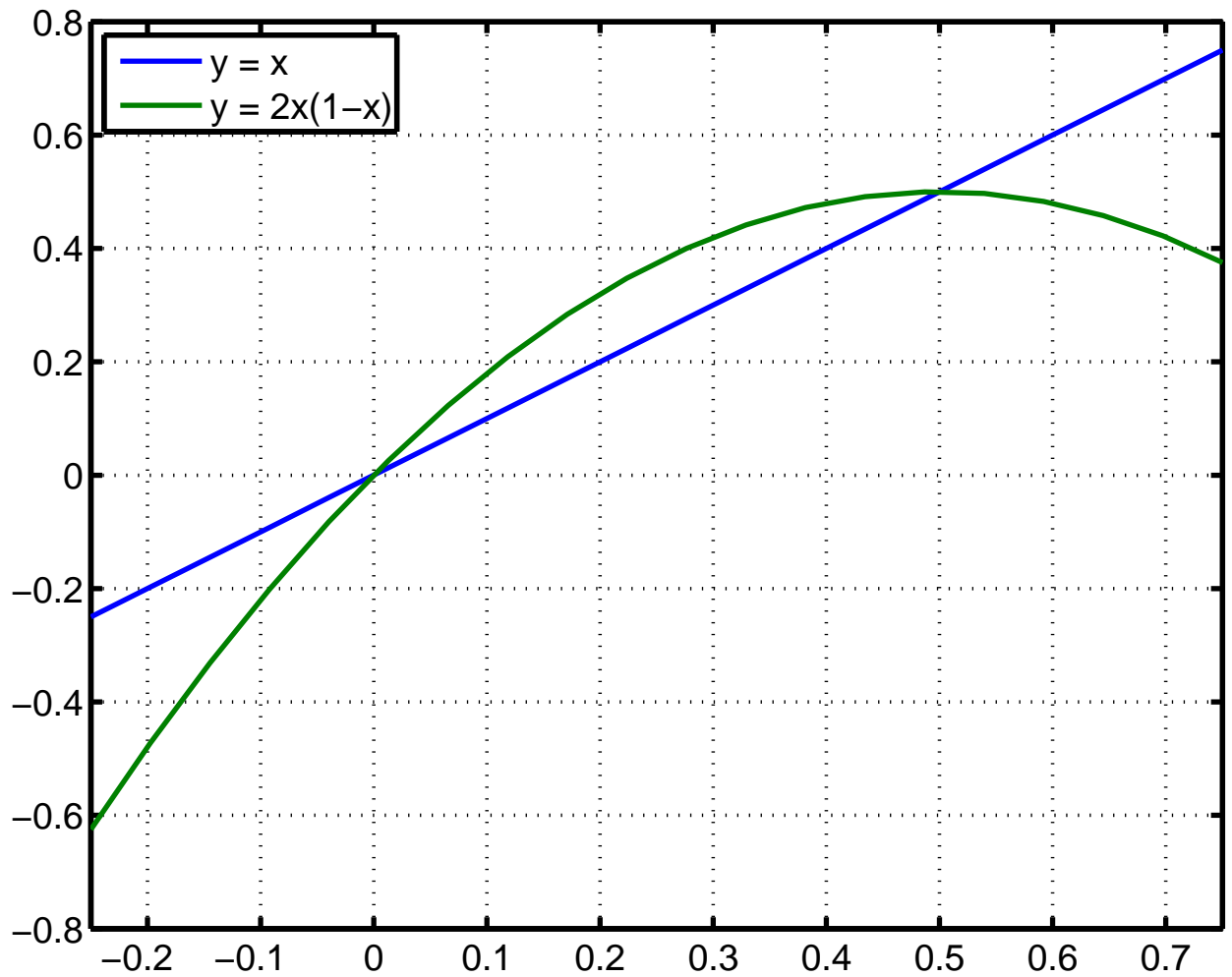# Worksheet #1: Cobweb plots

(1) Let $f(x) = 2x(1-x)$. Find $f^2(x)$ (simplify to a polynomial), and $f^3(x)$ (you don't have to simplify this one).

(2) Sketch cobweb plots here to answer the following questions.

(a) Where are the fixed points of the map?

(b) If $x_0 = 0.1$, where does the iteration lead?
What about $x_0 = -0.1$, $x_0 = 0.9$, $x_0 = 1.1$?

(c) Which fixed point is attracting (a sink)? Which one is repelling (a source)?

(d) Find the basin of attraction for the sink.

(e) Find the set of points that repell from the sink.