A box with an open top is to be constructed from a rectangular piece of cardboard that is 14 inches by 22 inches by cutting out equal squares of side length $x$ from each corner and folding up the sides as indicated. Express the volume as a function of $x$.

Solution.

$$V = x(22-2x)(14-2x) = 4x(77-18x+x^2) = 308x-72x^2+4x^3.$$
Name ________________________________