

March 2008 M⁶ Problem

f is a single variable real function. It is known that

$$f(x - y) = f(x) + f(y) - 2xy.$$

Find f (i.e. write down an explicit formula for $f(x)$). Is such function unique?

Solutions can be submitted until midnight March 31, 2008 to Irina Kogan via e-mail iakogan@ncsu.edu . Solutions submitted before noon March 10, 2008 are considered to be received at noon of March 10.