Compare the images,

The halved intensity image is relatively close to the image. The edges are a little sharper and there is more detail in the water. The shadows of the trees are also a bit darker. The image that had the linear increase applied to it seems much brighter. We have lost most of the water detail and the detail of the grass on the other side of the lake. The shadows are even darker in this image.

2.

a. [1,2,3] star [4,6,8] = [12,26,-8,-10,-8]

b.[5,9,1] star [1,2,-1] = [1,11,23,1,-5]

c.[4,-1,3] star [4,0,0] = [12,-4,16,0,0]

3.

a. (Show that correlations are not commutative

-[3,2,1] star [4,6,-8] = [4,14,16,2,-24]

-[4,6,-8] star [3,2,1] = [-24,2,16,14,4]

b. (show that correlations are no associative)

-([3,2,1] star [4,6,-8]) star [1,2,3] = [4,14,16,2,-24] star [1,2,3] =

[-24,-46,-52,52,80,50,12]

-[3,2,1] star ([4,6,-8] star [1,2,3]) = [3,2,1] star [-8,-10,-8,26,12] =

[-8,-26,-52,-20,50,102,36]