

Homework #2
Due Tu. 9/29

Be sure to show all your work for credit. You must turn in your code as well as output files (**code attached at the end of the report**).

Please generate a report that contains the code and output in a single readable format using Latex.

0. Getting Started

- Download the homework images from the class website.
<http://www.ee.unlv.edu/~b1morris/ecg782/hw/hw02>

1. (GW 6.16)
2. (GW 6.17) Perform the operation in Matlab for parts (b) and (c).
3. (GW 6.25)
4. (GW 6.28) Use Matlab to plot the surface. *Hint: ellipsoid.m.*
5. Prove the validity of the duality expressions:

(a) $(A \oplus B)^C = A^C \ominus \hat{B}$

(b) $(A \bullet B)^C = (A^C \circ \hat{B})$

(c) $(A \circ B)^C = (A^C \bullet \hat{B})$

6. Dilate the image given in Figure 13.50(a) with the structuring element in (b). Do this by hand and using Matlab.

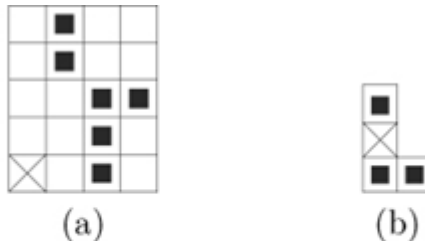


Figure 13.50: (a) Image to be processed. Assume that image data are undefined outside of the image domain. (b) Structuring element.
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7. (GW 2.23)
8. (GW 9.5)
9. (GW 9.6)
10. (GW 9.19)