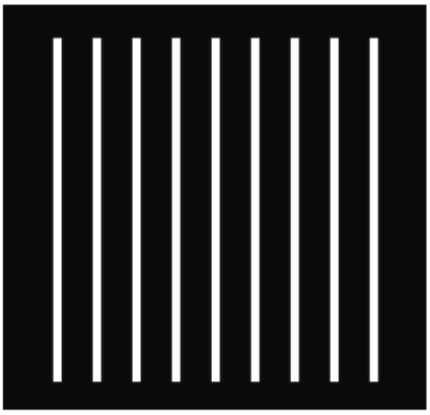
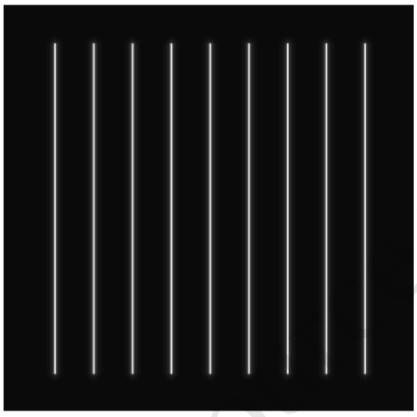
After using geometric mean filter, the center 5 columns of 3*3 filter and the center 1 column of 7*7 filter will still remain the same color, which has value 240. And pixels outside the bar by (r-1)/2 columns will still have the same color, which has values 10. The rest of the image pixels will have some intermediate values and show as grey.

For 9*9 filer, the bar will be blur because in the original image the bar is 7 pixels wide, and here all pixels in the bar will be changed to another values, therefore blur will be obvious. For the center column, after using the geometric mean filter, the value will be changed from 240 to (10**18+240**63)**(1/81) , which is 71.0027893294086.

5.3: Harmonic mean filter



(a). 3*3 HMF



(b). 7*7 HMF

(c). 9*9 HMF

(a) is 5 pixels wide and 208 pixels high, (b) is 1 pixels wide and 204 pixels high, (c) won't have value 240 anymore and the center column of the bar will have value 81/((1/10)*18+(1/240)*63) = 39.27. because in ervey filter window, the min is 10. The corner will look like this: 

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