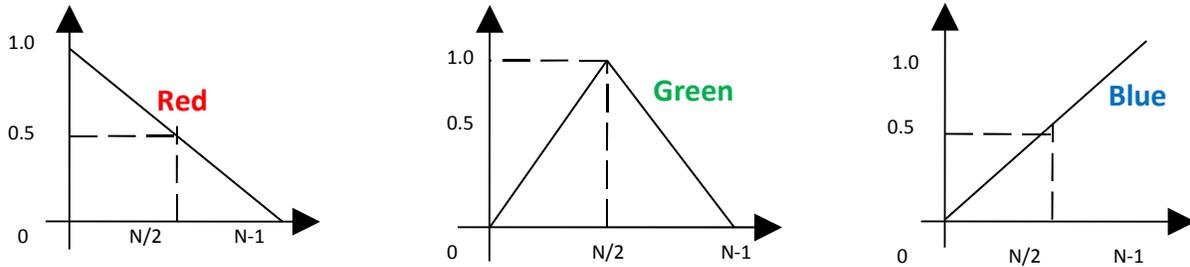


**6.5** In a simple RGB image, the R,G, and B component images have the horizontal intensity profiles shown in the following diagram. What color would a person see in the middle column of this image?



**6.12** Sketch the HSI components of the image in Problem 6.6 as they would appear on a monochrome monitor.

**6.16** The 8-bit images of Problem 6.16 are (left to right) the H, S, and I component images from Fig. 6.16. The numbers indicate gray-level values. Answer the following questions, explaining the basis for your answer in each. If it is not possible to answer a question based on the given information, state why you cannot do so.

- (a) Give the gray-level values of all regions in the hue image.
- (b) Give the gray-level values of all regions in the saturation image.
- (c) Give the gray-level values of all regions in the intensity image.

**6.26** Show that Eq. (6.7-2) reduces to Eq. (6.7-1) when  $C=I$ , the identity matrix.

**6.28** Sketch the surface in RGB space for the points that satisfy the equation

$$D(z, a) = [(z - a)^T C^{-1} (z - a)]^{1/2} = D_0$$

where  $D_0$  is a specified nonzero constant. Assume that  $a=0$  and that

$$C = \begin{bmatrix} 8 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$