```
%%   David Murray
%%   113818946
%%   1/21/2018
%%   Computer Vision: Homework 1 -- Samuel Cheng

rgbImage = imread('C:\Users\Dave\Desktop\white_balance_example.png');
rgbImageOriginal =
imread('C:\Users\Dave\Desktop\white_balance_example.png');
grayImage = rgb2gray(rgbImage); % Convert to gray so we can get the mean
luminance.
% Extract the individual red, green, and blue color channels.
redChannel = rgbImage(:, :, 1);
greenChannel = rgbImage(:, :, 2);
blueChannel = rgbImage(:, :,3);
meanR = mean2(redChannel);
meanG = mean2(greenChannel);
meanB = mean2(blueChannel);
meanGray = mean2(grayImage);
% Make all channels have the same mean
redChannel = uint8(double(redChannel) * meanGray / meanR);
greenChannel = uint8(double(greenChannel) * meanGray / meanG);
blueChannel = uint8(double(blueChannel) * meanGray / meanB);
% Recombine separate color channels into a single, true color RGB image.
rgbImage = cat(3, redChannel, greenChannel, blueChannel);
subplot(1,2,1)
image(rgbImage);
subplot(1,2,2)
image(rgbImageOriginal);
```

Matlab Output:

meanR = 101.8584

meanG = 111.9194

meanB = 152.4245

meanGray = 113.5317