Exercises – Stereo

1. Disparity map

a) Read the left and right images in grayscale;
b) Calculate the disparity map using the `StereoBM` class with the following arguments: `BASIC_PRESET`, 80, 21;
c) Convert the disparity map (which is in `CV_16S`) to `CV_8U` using the `convertTo` method of the `Mat` class. An example: http://docs.opencv.org/doc/user_guide/ug_mat.html#visualizing-images
d) Show the disparity map and interpret the results.

2. Epipolar lines

a) Consider the following manually annotated points in the left and right images:

Left	Right
841,94	813,94
740,641	685,641
732,888	705,888
1091,805	1065,805
781,1068	758,1069
1114,669	1075,669
1020,771	989,771
227,922	217,922

b) Calculate the fundamental matrix using the `findFundamentalMat` function with the `CV_FM_RANSAC` method;
c) Calculate the epipolar lines using the `computeCorrespondEpilines` with the left image as input;
d) Draw the corresponding lines in the right image. To draw each line use the points in x=0 and x=cols (number of columns of the image);
e) Show the right image and interpret the results.