**Background Subtraction**

For this problem, you are given a set of 100 images of background, *I1, I2, … I100.* and one

test image, *J*. These are in BackgroundImages.zip and foreground\_image.bmp. The images are in color, but you should convert them to grayscale. Your task is to classify each pixel in the test image as either foreground or background. Suppose pixel *J(x,y)* has intensity *k.* To classify it, you should compute:



Once you’ve computed this for each pixel, you’ll need to choose a threshold, *T*, so that

you classify all pixels as foreground when *P(J(x,y)=k)<T.* Choose values of *T* and sigma by

hand that seem to produce pleasing results. Our results are in BackgroundSubtractionResults.jpg. Turn in your code, a picture of your result, and indicate which values you used.