clc; clear all; close all;

mean = 1152;

stdev = 440;

s = 0.005344;

c = 0.022243;

ratio = s/c;

optimal = norminv(ratio, mean, stdev);

r = 0:0.01:3000;

y = 1/(stdev\*sqrt(2\*pi))\*exp(-(r-mean).\*(r-mean)/(2\*stdev\*stdev));

plot(r,y,'-')

axis([0 3000 0 0.001])

hold on

x = 0:0.1:ceil(optimal);

z = 1/(stdev\*sqrt(2\*pi))\*exp(-(x-mean).\*(x-mean)/(2\*stdev\*stdev));

bar(x, z, 'g')