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% Lab 2, Exercise 1
% Rough sense check of an LCG with reasonably good parameter choices
results = zeros(3,3);
a = 16807; % See notes p.16
m = 2^31 - 1;
c = 0;
x_0 = 1;
for i = 1:4
    sample = LCG(a,c,m,x_0,10^i);
    results(i,1) = 10^i;
    results(i,2) = mean(sample);
    results(i,3) = var(sample);
    subplot(2,2,i), hist(sample);
end
format shortEng
format compact % check out the MATLAB help pages for more info
disp(results)

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    10.0000e+000    443.7426e-003    106.6084e-003
   100.0000e+000    518.4247e-003    86.8844e-003
    1.0000e+003    497.9614e-003    78.8276e-003
   10.0000e+003    501.8268e-003    83.6524e-003

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