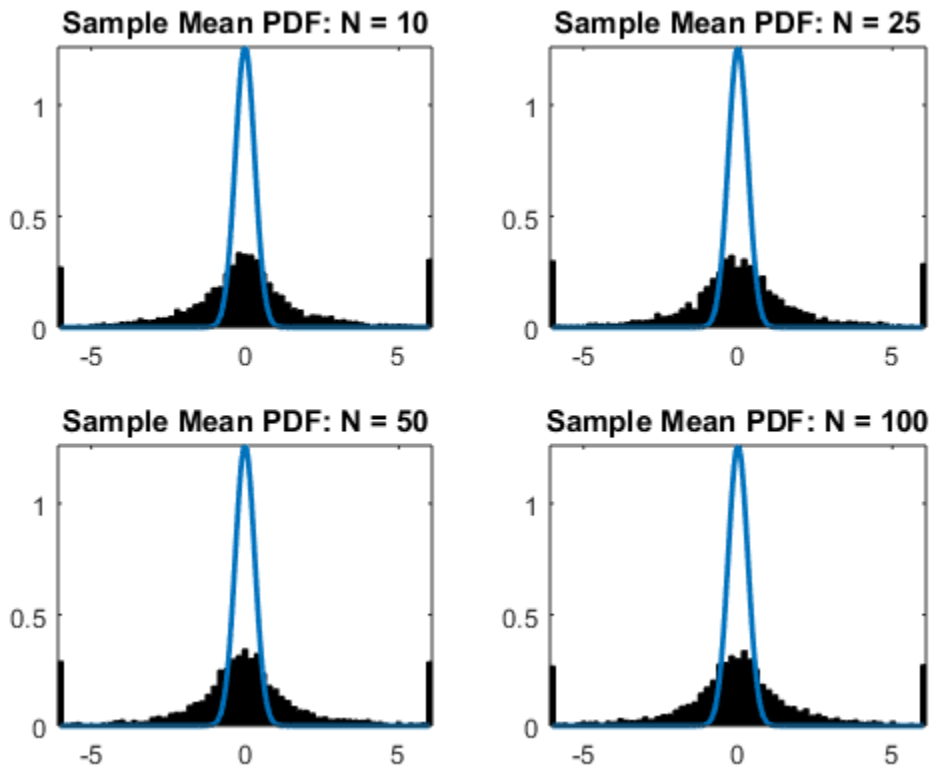

```

N = [10 25 50 100];
for i=1:4;
    samples = cauchy_rand(N(1,i),5000);
    % samples is an N by 1000 matrix of exponential random variables
    % i.e. each column is sample of N exponential random variables
    % f is the frequency, x denotes the bin centers
    [f,x] = hist(mean(samples),-6:0.2:6);
    % mean(samples) takes the mean along each column and returns a row
    % vector with these values
    subplot(2,2,i), bar(x,f/trapz(x,f)),...
        colormap(bone),...
        title(['Sample Mean PDF: N = ',num2str(N(1,i))]);
    hold on;
    t = min(x):0.01:max(x);
    sigma_squared = 1./N(1,1); % I don't adjust the variance to try to
get
    % a slightly better fit with the normals
    mu = 0;
    pdf = (1./sqrt(2*pi*sigma_squared))...
        .*exp(-(t-mu).^2./(2*sigma_squared));
    hold on, subplot(2,2,i),plot(t,pdf,'LineWidth',2);
    axis tight;
end

```



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