% Given data

mu = 2040; % Mean life of bulbs (hours)

sigma = 60; % Standard deviation (hours)

n = 2000; % Total number of bulbs

% (i) Probability of bulbs burning more than 2150 hours

p1 = 1 - normcdf(2150, mu, sigma);

num1 = round(p1 \* n);

% (ii) Probability of bulbs burning less than 1950 hours

p2 = normcdf(1950, mu, sigma);

num2 = round(p2 \* n);

% (iii) Probability of bulbs burning between 1920 and 2160 hours

p3 = normcdf(2160, mu, sigma) - normcdf(1920, mu, sigma);

num3 = round(p3 \* n);

% Display results

fprintf('(i) P(X > 2150) = %.4f, Estimated bulbs = %d\n', p1, num1);

fprintf('(ii) P(X < 1950) = %.4f, Estimated bulbs = %d\n', p2, num2);

fprintf('(iii) P(1920 < X < 2160) = %.4f, Estimated bulbs = %d\n', p3, num3);