Name: Tushar Panchal

En.No: 21162101014

Sub: P&S(Probability & Statistics)

Branch: CBA

Batch:41

-----------------------------PRACTICAL 7-----------------------------

❖ _**Question :**_ To study Central Limit Theorem.

1):

✓ **Source Code :**

```
A = [1 2 3 4 5 6];
n = 5;
B = [];
for k = 2:n

    for i = 1:6
        C = A + i
        B = [B C]
    endfor

    for j = k:6 * k
        p(j - (k - 1)) = length(find(B == j)) / 6^k;
    endfor

    A = B;
    B = [];
endfor

bar(k:6 * k, p, 1)
title(sprintf('When %d dice are rolled ', k))
xlabel(sprintf('Outcome when %d dice are rolled ', k))
ylabel(sprintf('Probablity'))
xticks([k:6 * k])
```
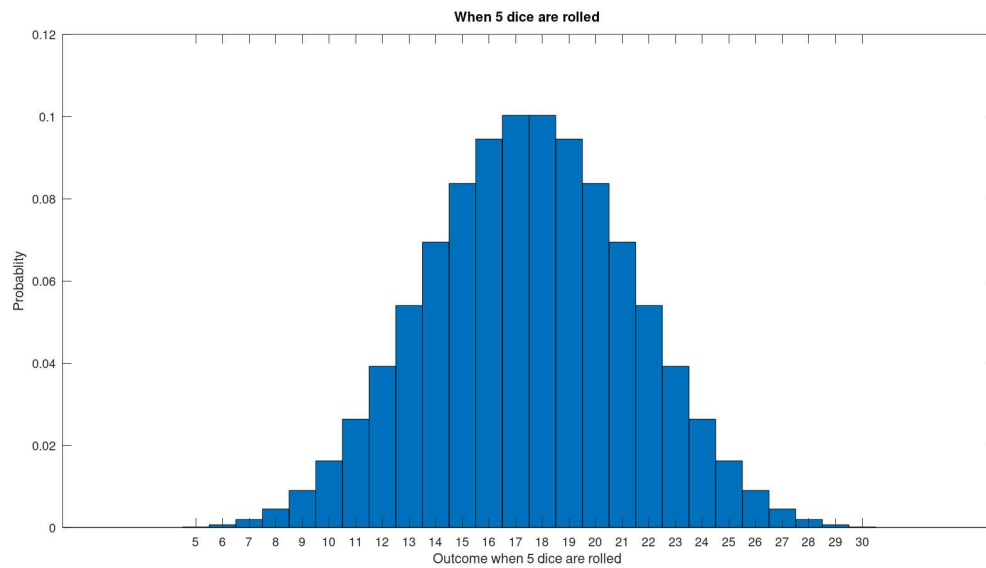
✓ **Output :**

2):

✓ **Source Code :**

```matlab
clc; clear all; close all;
d = 5;
r = 5000;

for i = 1:d
    A = randi([1, 6], i, r);
    B = sum(A, 1);
endfor

for j = d:6 * d
    p(j - (d - 1)) = length(find(B == j)) / r;
endfor

bar(d:6 * d, p, 1)%histogram
set(gca, 'fontsize', 17);
title(sprintf('When %d dice are rolled', d))
xlabel(sprintf('Sum of outcomes when %d dice are rolled', d))
ylabel('Probability')
```

✓ **Output :**

When 5 dice are rolled