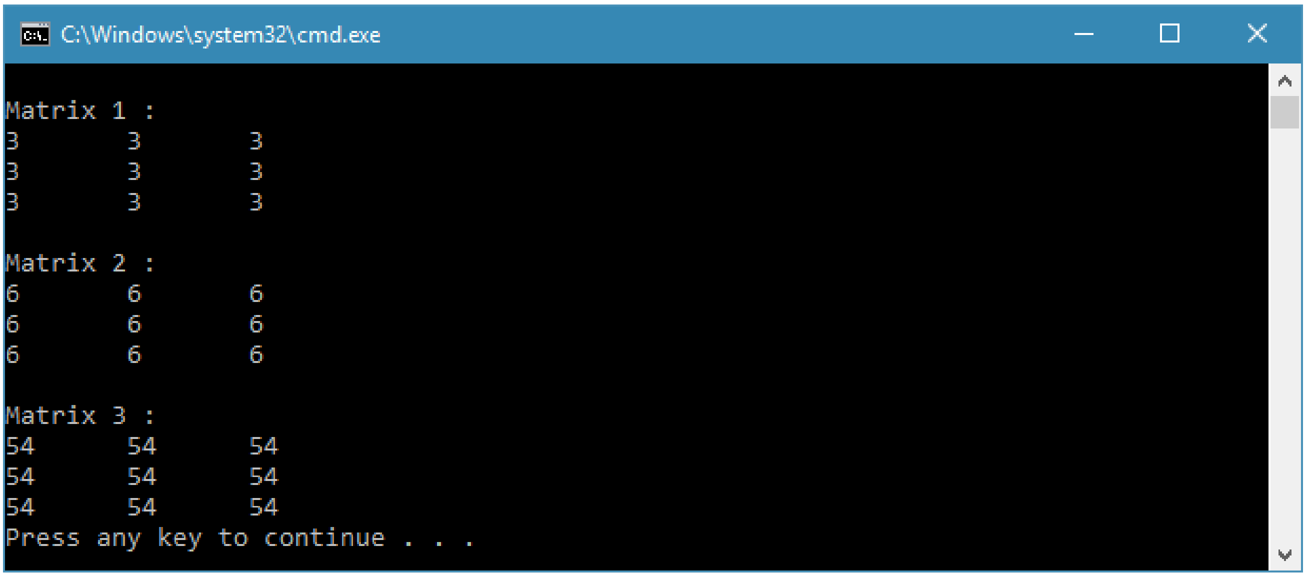
Practical: 12 Derive a class ‘MAT’ from MATRIX class created in above program. Add a member function to overload ‘*’ operator to multiply two objects. (Single Inheritance)

```
#include "stdafx.h"
#include <iostream>
using namespace std;
class MATRIX
{    int arr[3][3];
public:
     MATRIX operator +(MATRIX);
     void indata(int x)
     {    for (int i = 0; i < 3; i++)
               for (int j = 0; j < 3; j++)
                    arr[i][j] = x;
     }
     MATRIX()
     {    indata(0);      }
     MATRIX(int y)
     {    indata(y);      }
     void oudata()
     {    cout << endl;
          for (int i = 0; i < 3; i++)
          {    for (int j = 0; j < 3; j++)
               {    cout << arr[i][j] << "\t"; }
               cout << endl;
          }
     }
```

```
    int retdata(int x, int y)
    {    return arr[x][y];     }
    void putdata(int x,int y,int z)
    {    arr[x][y] = z;        }
};
MATRIX MATRIX :: operator +(MATRIX c1)
{    MATRIX c2;
    for (int i = 0; i < 3; i++)
        for (int j = 0; j < 3; j++)
            c2.arr[i][j] = arr[i][j] + c1.arr[i][j];
    return c2;
}
class MAT : public MATRIX
{
public:
    MAT operator *(MAT);
    MAT()
    {    indata(0); }
    MAT(int x)
    {    indata(x); }
};
MAT MAT :: operator *(MAT m1)
{    MAT m3;
    int x;
    for (int i = 0; i < 3; i++)
        for (int j = 0; j < 3; j++)
        {    x = m1.retdata(0, j) * retdata(i, 0);
```

```
                    x += m1.retdata(1, j) * retdata(i, 1);
                    x += m1.retdata(2, j) * retdata(i, 2);
                    m3.putdata(i, j, x);
               }
     return m3;
}
int main()
{    MAT m1(3), m2(6), m3;
     cout << endl << "Matrix 1 : ";
     m1.oudata();
     cout << endl << "Matrix 2 : ";
     m2.oudata();
     m3 = m1 * m2;
     cout << endl << "Matrix 3 :";
     m3.oudata();
     return 0;
}
```

Output 12



```

Matrix 1 :
3       3       3
3       3       3
3       3       3

Matrix 2 :
6       6       6
6       6       6
6       6       6

Matrix 3 :
54      54      54
54      54      54
54      54      54
Press any key to continue . . .
```