STRASSEN'S MATRIX MULTIPLICATION

CODE:

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#include<iostream>
using namespace std;
int main() {
  int z[2][2];
  int i, j;
  int m1, m2, m3, m4 , m5, m6, m7;
    int x[2][2] = {
      {1, 3},
      {5, 7}
    };
  int y[2][2] = {
    {8, 4},
    {6, 2}
  };
  cout<<"The first matrix is: ";
  for(i = 0; i < 2; i++) {
    cout<<endl;
    for(j = 0; j < 2; j++)
      cout<<x[i][j]<<" ";
  }
  cout<<"\nThe second matrix is: ";
  for(i = 0;i < 2; i++){
    cout<<endl;
    for(j = 0;j < 2; j++)
      cout<<y[i][j]<<" ";
  }

  m1 = (x[0][0] + x[1][1]) * (y[0][0] + y[1][1]);
  m2 = (x[1][0] + x[1][1]) * y[0][0];
  m3 = x[0][0] * (y[0][1] - y[1][1]);
  m4 = x[1][1] * (y[1][0] - y[0][0]);
  m5 = (x[0][0] + x[0][1]) * y[1][1];
```

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  m6 = (x[1][0] - x[0][0]) * (y[0][0]+y[0][1]);
  m7 = (x[0][1] - x[1][1]) * (y[1][0]+y[1][1]);

  z[0][0] = m1 + m4- m5 + m7;
  z[0][1] = m3 + m5;
  z[1][0] = m2 + m4;
  z[1][1] = m1 - m2 + m3 + m6;

  cout<<"\nProduct formed using Strassen's algorithm: ";
  for(i = 0; i < 2 ; i++) {
    cout<<endl;
    for(j = 0; j < 2; j++)
      cout<<z[i][j]<<" ";
  }
  return 0;
}
```

OUTPUT: