```
#include <stdio.h>

#include <math.h>

// Get size of the numbers

int getSize(long num)

{

    int count = 0;

    while (num > 0)

    {

        count++;

        num /= 10;

    }

    return count;

}

long karatsuba(long X, long Y)

{

    // Base Case
```

```
    if (X <= 10 && Y <= 10)

        return X * Y;

    // determine the size of X and Y

    int size = fmax(getSize(X), getSize(Y));

    // Split X and Y

    int n = (int)ceil(size / 2.0);

    long p = (long)pow(10, n);

    long a = (long)floor(X / (double)p);

    long b = X % p;

    long c = (long)floor(Y / (double)p);

    long d = Y % p;

    printf("X = %d \t Y = %d \t n = %d \t a = %d \t b = %d \t c = %d \t d = %d \n", X, Y, n, a, b, c,
d);

    // Recur until base case

    long ac = karatsuba(a, c);

    long bd = karatsuba(b, d);
```

```
    long e = karatsuba(a + b, c + d) - ac - bd;

    printf("ac = %d,\t bd = %d, \t e = %d \n", ac, bd, e);

    // return the equation

    return (long)(pow(10 * 1L, 2 * n) * ac + pow(10 * 1L, n) * e + bd);

}

int main() {

    // Write C code here

    printf("Hello world \n");

    long ans = karatsuba(123, 908);

    printf("%ld", ans);

    return 0;

}
```