

```
1 #include <cstdint>
2 #define __USE_MATH_DEFINES
3 #include "BernsteinBasisPolynomial.h"
4 #include "Combination.h"
5 #include <cmath>
6 #include <iostream>
7
8 BernsteinBasisPolynomial::BernsteinBasisPolynomial(unsigned int aV,
9                                                     unsigned int aN) {
10     this->fFactor = Combination(aN, aV);
11 }
12
13 // Do you only need to output the polynomial's value at a certain point?
14 // Because that's exactly what the problem asks. You're not required to
15 // output the polynomial.
16
17 double BernsteinBasisPolynomial::operator()(double aX) const {
18     size_t v = this->fFactor.getK(), n = this->fFactor.getN();
19
20     // avoid numbers getting too small by putting a big number inbetween
21     return pow(aX, v) * this->fFactor() * pow(1 - aX, n - v);
22 }
```