// Example of axiomatic proof techniques
// Raise a double value to an integer power
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#include <iostream>
using namespace std;

// raise a non-zero double to a non-negative integer power
double raiseNonNegInteger (double x, int y) {
    // y >= 0 and x != 0
    // 1x^y = x^y and x != 0 and y >= 0
    double z = 1;
    // zx^y = x^y and x != 0 and y >= 0
    double a = x;
    // za^y = x^y and a != 0 and y >= 0
    int b = y;
    // za^b = x^y and a != 0 and b >= 0
    while (b > 0) {
        // za^b = x^y and b >= 0 and a != 0 and b > 0
        // za^b = x^y and b >= 0 and a != 0 and b > 0 and 0 < b <= b
        // def h = b; decreased and bounded below
        // za^b = x^y and b >= 0 and a != 0 and b > 0 and 0 < b <= h
        if (b & 1) {
            // za^b = x^y and b >= 0 and b > 0 and a != 0 and odd(b) and 0 < b <= h
            // za^b = x^y and b > 0 and a != 0 and b <= h
            // aza^(b-1) = x^y and b-1 >= 0 and a != 0 and 0 <= b-1 < h
            b = b - 1;
            // aza^b = x^y and b >= 0 and a != 0 and 0 <= b < h
        }
        else {
            // za^b = x^y and b >= 0 and b > 0 and even(b) and 0 < b <= h
            // z(aa)^b = x^y and b >= 0 and a != 0 and 0 <= b < h
            // a = a * a;
            // za^b = x^y and b >= 0 and a != 0 and 0 <= b < h
        }
        // za^b = x^y and b >= 0 and a != 0 and 0 <= b < h
    }
    // za^b = x^y and b >= 0 and a != 0 and b <= 0
    // z = x^y
    return z;
}

// raise any double to an integer power (may return a non-number)
double raiseToInt (double x, int y) {
```cxx
double z;
// true
if (x == 0) {
    // x = 0
    if (y > 0) {
        // x = 0 and y > 0
        // 0 = x^y
        z = 0.0;
        // z = x^y
    } else {
        // x = 0 and y <= 0
        // 1.0 / x = x^y
        z = 1.0 / x;
        // z = x^y
    }
    // z = x^y
} else {
    // x != 0
    if (y < 0) {
        // -y >= 0 and x != 0
        // 1.0 / (x^-y) = 1.0 / (x^-y) and y < 0
        z = 1.0 / raiseNonNegInteger(x, -y);
        // z = 1.0 / (x^-y) and y < 0
        // z = x^y
    } else {
        // y >= 0 and x != 0
        // x^y = x^y and y >= 0 and x != 0
        z = raiseNonNegInteger(x, y);
        // z = x^y
    }
    // z = x^y
}
// z = x^y
return z;
}

int main () {
    double a;
    int b;
    cin >> a >> b;
    cout << raiseToInt(a,b) << endl;
    return 0;
}
```