1) Write a program in Python or C++ that calculates the distance to the landing point of a projectile. Calculate distance is based on angle launch (in radians) with an initial velocity of velocity (in feet per second), ignoring air resistance, is given by the formula

To simplify input for the user, your program should allow the angle to be input in degrees. The formula for converting degrees to radians is

Output result of how far the projectile is from the landing point. If projectile is within a foot, display “Good Job”. Otherwise, display “Please try again”.

2) What is the output of the following program?

#include <iostream>

using namespace std;

int main() {

int lastNum, numToPrint;

for (lastNum = 1; lastNum <=10; lastNum++)

{

for (numToPrint = 1; numToPrint <= lastNum; numToPrint++)

cout << numToPrint << ' ';

cout << endl;

}

return 0;

}

3) What is printed by the following program fragment, assuming the input value is 0? (Variables i and n are both type int)

cin >> n;

i = 54;

do

{

cout << i << ' ';

i--;

} while (i >= n);

4) What is printed by the following program fragment? (row and col are both type int)

for (row = 1; row <= 20; row++)

{

for (col = 1; col <= 20 - row; col++)

cout << '\*';

for (col = 1; col <= 2\*row - 1; col++)

cout << ' ';

for (col = 1; col <= 20 - row; col++)

cout << '\*';

cout << endl;

}

5) Create the number guessing game between 1-100 that gives 5 tries before showing the number. Create in Python and C++; explain the differences and which you thought was easier to create in.