Clown Skateboard Assignment - Robert P.

Test Outputs:

```
e_prevost@ares:~/homeworkAssignments$ ./clownSkateboard
Please enter the height of the hill (in meters) followed by the height of the ramp (in meters) and then the angle (in degrees): 10 3 45
Exit velocity of ramp: 11.7132 meters/second
Meters travelled: 14 meters
e_prevost@ares:~/homeworkAssignments$ ./clownSkateboard
Please enter the height of the hill (in meters) followed by the height of the ramp (in meters) and then the angle (in degrees): 5 2 30
Exit velocity of ramp: 7.66812 meters/second
Meters travelled: 5.19615 meters
e_prevost@ares:~/homeworkAssignments$ ./clownSkateboard
Please enter the height of the hill (in meters) followed by the height of the ramp (in meters) and then the angle (in degrees): 20 3 50
Exit velocity of ramp: 18.2538 meters/second
Meters travelled: 33.4835 meters
```

Source Code:

```
/* Code by: Robert Prevost
*  takes in user input of hill height (meters), ramp height (meters) and angle of ramp (degrees)
*  outputs exit velocity when leaving the ramp and feet travelled in x-direction
*/
#include <iostream>
#include <cmath>

using namespace std;

const double g = 9.8; //m/(s^2)


int main()
{
        double hillHeight = 0.0, rampHeight = 0.0, rampAngle = 0.0;
        cout << "Please enter the height of the hill (in meters) followed by the height of the ramp (in meters) and then the angle (in degrees): ";
        cin >> hillHeight >> rampHeight >> rampAngle;

        double endRampVelocity = sqrt(2*g*(hillHeight - rampHeight));

        double radians = rampAngle*M_PI/180.0;

        double distanceTravelled = (pow(endRampVelocity,2.0)/g) * (sin(2*radians));

        cout << "Exit velocity of ramp: " << endRampVelocity << " meters/second\n" << "Meters travelled: " << distanceTravelled << " meters\n";
        return 0;
}
```

Source Code Text:

```
/* Code by: Robert Prevost
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*  outputs exit velocity when leaving the ramp and feet travelled in x-direction
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(in meters) and then the angle (in degrees): ";
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	double radians = rampAngle*M_PI/180.0;

	double distanceTravelled = (pow(endRampVelocity,2.0)/g) * (sin(2*radians));

	cout << "Exit velocity of ramp: " << endRampVelocity << " meters/second\n" << "Meters
travelled: " << distanceTravelled << " meters\n";
	return 0;
}
```