

## Ramp Calculator Code

```
import Foundation
func RampLength(_ height:Int, _ rise:Int = 1, _ run: Int = 12, metric: Bool = true)-> String {
    var result:String
    var ratio = "\rise:\run"
    var grade:Double = Double(rise)/Double(run)
    var percentGrade:Double = grade * 10000
    percentGrade.round()
    percentGrade = percentGrade/100
    /* If we wish to have an angle in degrees, we have to divide the radians by / (180 / PI). The
functions have also Float alternatives. */
    var slope = atan(grade)*180/M_PI*100
    slope.round()
    slope = slope/100
    var length:Double
    if metric == true {
        length = Double((height*rise*run*10/100))
        length.round()
        length = length/10
        result = "Height: \(\height) cm\nRatio: \(\rise):\(\run) \nSlope: \(\slope) degrees\nPercent
Grade: \(\percentGrade)%\nRamp Length: \(\length) meters"
    } else {
        result = "Height: \(\height) inches\nRatio: \(\rise):\(\run)\nSlope: \(\slope) degrees\nPercent
Grade: \(\percentGrade)%\nRamp Length: \(\Double((height*rise*run/12))) feet"
    }
    return result
}
print(RampLength(12, 1, 12, metric: false))
print(RampLength(30, 1, 12))
print(RampLength(40, 1, 12))
print(RampLength(44, 1, 12))
```

```
Height: 12 inches
Ratio: 1:12
Slope: 4.76 degrees
Percent Grade: 8.33%
Ramp Length: 12.0 feet
Height: 30 cm
Ratio: 1:12
Slope: 4.76 degrees
Percent Grade: 8.33%
Ramp Length: 3.6 meters
Height: 40 cm
Ratio: 1:12
Slope: 4.76 degrees
Percent Grade: 8.33%
Ramp Length: 4.8 meters
Height: 44 cm
Ratio: 1:12
Slope: 4.76 degrees
Percent Grade: 8.33%
Ramp Length: 5.2 meters
```