

# Swift: Constants, Types, and Printing

## Part 1: Understanding Types

In the right column, write the type of each constant declaration, or 'error'.

Code	Type
<code>let a: Int = 5</code>	Int
<code>let b = 8</code>	Int
<code>let c = -6.7</code>	Double
<code>let d: Double = 5</code>	Double
<code>let e = "Catz!"</code>	String
<code>let f: Int = 7.8</code>	ERROR
<code>let g = "5"</code>	String
<code>let h: Double = "98.7"</code>	ERROR
<code>let i = 9 + 7</code>	Int
<code>let j = 9.8 + 3</code>	Double
<code>let k: Int = 9.5 - 0.5</code>	ERROR

## Part 2: Evaluating Code - Compilation Errors

Below is some Swift code. Some lines may produce compiler errors.

First, mark all of the lines which will produce compiler errors with asterisks.

Then, please rewrite **any** combination of all the available lines of code, so that the entire snippet compiles.

In addition, try to maintain the original intent of the code.

```
import Foundation // This is needed for asin() and cos()

// We compute what angle to fire a cannon at to hit a target.
// Given parameters:
// Change: insert : Double
let distanceToTarget: Double = 800 // The target is 800 meters away

let cannonMuzzleSpeed = 524.256 // The shot leaves at about 524 m/s


// Computation: First we compute the intermediate value
// Change: remove : Int
let distanceSin = 9.8 * distanceToTarget / (cannonMuzzleSpeed *
cannonMuzzleSpeed)

// Then we compute the angle to fire the cannon at
let angle = asin(distanceSin) / 2

// Also, we compute how long it will take to hit the target
let horizontalSpeed = cos(angle) * cannonMuzzleSpeed

let timeOfFlight = distanceToTarget / horizontalSpeed
```

## Part 3: Evaluating Print Statements

Below is some Swift code. It compiles fine.

Below it, please write what you think the code will print. If you haven't specifically learned what some code means, that's fine, you should still try to guess what it will do!

```
let team1 = 1678
let team2 = 254
let team3 = 971
let team4 = 1
let team5 = 513
let team6 = 632

let matchType = "Quarter Final"
let matchNum = 5

print("In \(matchType) \(matchNum):")
print("\(team1) + \(team2) + \(team3) vs. \(team4) + \(team5) + \(team6)")
```

In Quarter Final 5:

1678 + 254 + 971 vs. 1 + 513 + 632