# Review: Midterm 2

CS112

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1. Fill in the blank.  An @IBOutlet attribute can be used to _____.

2. True/False: you place a button on your ViewController in Storyboard and immediately build and run the app.  When the user taps this button, some code in your ViewController class is called automatically.

3. True/False: consider the class below. The class will compile.

4. If not, name two ways you could fix the class.

```
class Fizz {
    var x: Int
    var y: Int?

    init(x: Int, y: Int) {
        self.y = y
    }
}
```

5. Fill in the blank. When a class hands off some of its functionality / responsibilities to another class, it is called _____.

a) subclass b) superclass

c) delegation d) optional

6. True / False. A subclass inherits all of the properties and methods in its superclass.

7. True / False. A subclass overrides one of the methods in its superclass named foo(). When the subclass method foo() is called, the superclass method foo() is called first automatically.

8.  True / False.  A class can have a superclass, or conform to a protocol, but not both.

9. Provide one reason that the MVC design pattern is useful.

10. Define a Swift class called Date.  It should meet the following requirements:

- It should store a date in three Int properties: month, day, year.

- There should be a init() method which takes three Int parameters to initialize the date.  The init() method should not accept values for day greater than 31 or less than 1, or values for month greater than 12 or less than 1.  If it is called with such out of range values an error message should be printed out to the debug area and the corresponding field set to zero.

- It should conform to the **canPrint** protocol defined below.  It's up to you how to do this as long as it conforms to the protocol.

```
protocol canPrint {
    func printInfo()
}
```

```
class MuniVehicle {
    var totalFares = 0.0

    func paidFare() {
        totalFares += 2.25
    }
    func getFares() -> Double {
        return totalFares
    }
}
```

11. Derive a new class CableCar which is a subclass of MuniVehicle. It should override paidFare() so that each time it is called, totalFares increases by 6 instead of 2.25.

Write some Swift code which creates a CableCar object, calls paidFare() twice, and calls getFares() to print out the totalFares to the debug area.

12. Consider the ViewController class below. someLabel is an @IBOutlet connected to a Label we created in Storyboard, which is initially set to 0. someButton() is an @IBAction function and is called when the user taps on a button in the storyboard.  Add code to this ViewController class which will increment the number in the label every time the user taps the button.

```
class ViewController: UIViewController {

    @IBOutlet weak var someLabel: UILabel!

    @IBAction func someButton(sender: UIButton) {
    }

}
```