

Name: _____

Student Number: _____

Signature: _____

The University Of New South Wales

Sample Exam

Semester 2, 2008

COMP1400

Programming for Designers

Time allowed: **2 hours**

Total number of questions: **XX**

Total number of marks: **60**

No examination materials permitted.

Calculators may **not** be used.

Questions are **NOT** worth equal marks.

Answer **all** questions.

This paper may not be retained by the candidate.

Answers must be written in ink.
Except where they are expressly
required, pencils may be used only
for drawing, sketching or graphi-
cal work.

Examiner's Use Only:

1	2	3	4	5	6	7	8	9	10	11	12	Total

Part A: Multiple Choice Questions

NOTE: Answer the questions in this section by filling in entries on the multiple-choice sheet supplied.

There will be 20 multiple choice questions in the exam. Here are some examples of the kind of thing you will be asked:

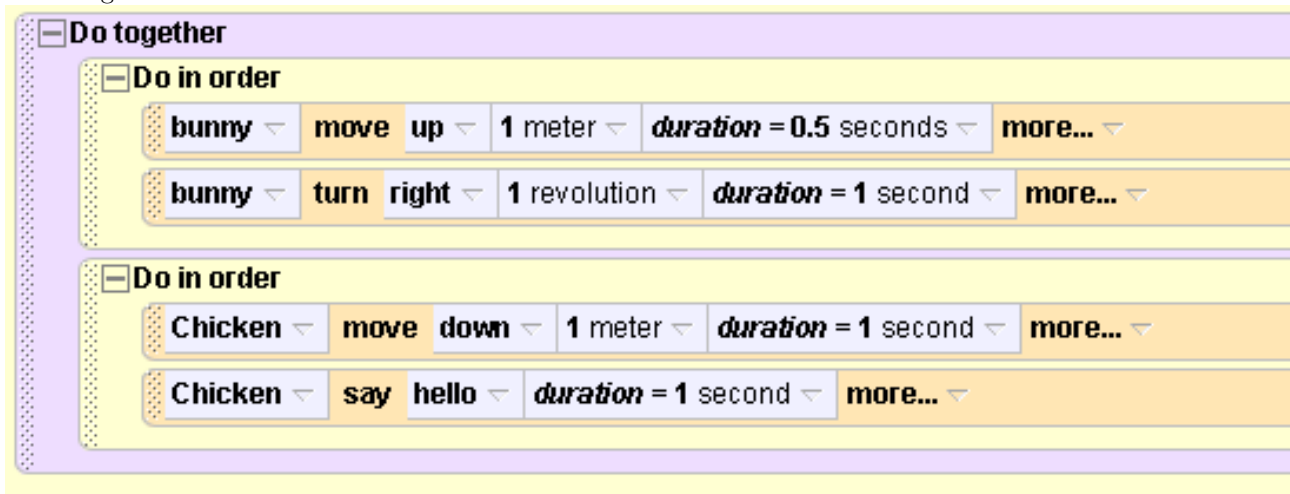
Question 1

The built-in method **set point of view** changes an object's

- A position only
- B orientation only
- C both position and orientation
- D none of the above

Question 2

How long does it take the code below to execute?



The image shows a Scratch script with the following structure:

- Do together** (purple background)
 - Do in order** (yellow background)
 - bunny** **move up** **1 meter** **duration = 0.5 seconds** **more...**
 - bunny** **turn right** **1 revolution** **duration = 1 second** **more...**
 - Do in order** (yellow background)
 - Chicken** **move down** **1 meter** **duration = 1 second** **more...**
 - Chicken** **say hello** **duration = 1 second** **more...**

- A 1 second
- B 1.5 seconds
- C 2 seconds
- D 3.5 seconds

Question 3

What is the return type of the expression $2 + 3 == 8$

- A Number
- B Boolean
- C Object
- D String

Question 4

What is the main difference between a list and an array?

- A A list can contain different types of data but an array cannot.
- B A list can contain the same object more than once but an array cannot.
- C A list can be accessed using an index but an array cannot.
- D A list can vary in size but an array cannot.

Question 5

What will the chicken say when the following code is run?

The code in the Scratch editor is as follows:

```
world.my first method No parameters  
x = 0  
While x <= 2  
  Chicken say x as a string  
  x set value to (1 + x)  
  Chicken say goodbye
```

- A Just "goodbye"
- B "0.0", "1.0", "goodbye"
- C "1.0", "2.0", "goodbye"
- D "0.0", "1.0", "2.0", "goodbye"
- E nothing

Part B: Short Answer Questions

NOTE: Answer all questions in the answer books provided. Show all working.

Question 6

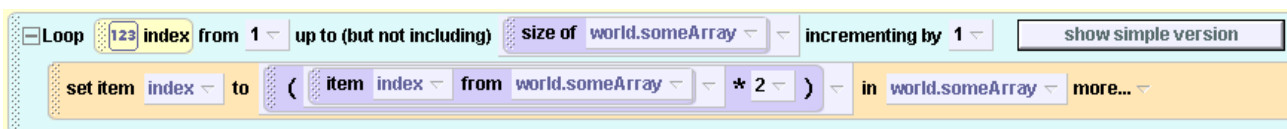
(2 marks)

What is the difference between a *method* and a *function*?

Question 7

(2 marks)

The following is a fragment of code from a method:



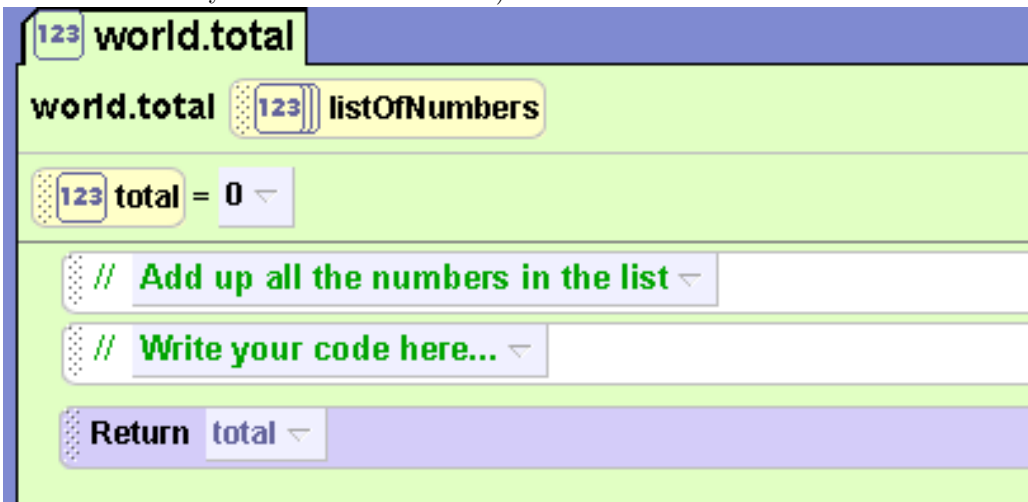
```
Loop 123 index from 1 up to (but not including) size of world.someArray incrementing by 1 show simple version
set item index to ( item index from world.someArray * 2 ) in world.someArray more...
```

Before the code is called, `world.someArray` contains the values 2, 5, 3, 1, 0. What values does it contain after the code is executed? Explain your answer.

Question 8

(5 marks)

Complete the following function to calculate the sum of all the numbers in a list (Note: you do not know in advance how many numbers are in the list).



```
123 world.total
world.total 123 listOfNumbers
123 total = 0
// Add up all the numbers in the list
// Write your code here...
Return total
```

Question 9

(10 marks)

Consider the following game:

There are five birds sitting in a tree. If the user clicks on a bird, it will fly away, but it will return 3 seconds later. The game continues until there are no birds left in the tree, at which point the message "You win" is displayed.

- Draw a flowchart outlining the program.

- Sketch the code for this program – do not be concerned about actual syntax, but do be careful which instructions go within an If/Else statement, within a DoTogether statement etc.

```
123 world.total
world.total 123 listOfNumbers
123 total = 0
// Add up all the numbers in the list
// Write your code here...
Return total
```