CSCA08 Fall 2017 Term Test #1
Duration — 110 minutes
Aids allowed: none

Student Number: _____

Markus Login: _____

Last Name: _____ **First Name:** _____

Question 0. [1 MARK]

Carefully read and follow all instructions on this page, and fill in all fields. Write all answers neatly in the space provided, or indicate clearly where your question continues.

Please place a checkmark (✓) beside your tutorial session

Tutorial Number	Date/Time	Room	TA Name	Check
TUT0001	FR 09:00 10:00	AA 208	David Liu	
TUT0002	FR 10:00 11:00	IC 326	Kevin Gao	
TUT0003	FR 13:00 14:00	BV 361	Meghan	
TUT0004	FR 14:00 15:00	MW 160	Saurav	
TUT0005	WE 19:00 20:00	HW 402	Mohammad	
TUT0006	TH 10:00 11:00	IC 320	Pat	
TUT0007	TU 09:00 10:00	AA 207	Prantar	
TUT0008	TU 10:00 11:00	BV 355	William	
TUT0009	TH 09:00 10:00	BV 260	Vladimir Efimov	
TUT0010	WE 09:00 10:00	AA 204	Maheshan	
TUT0011	WE 09:00 10:00	HW 308	Dharmik	
TUT0012	TH 13:00 14:00	SW 319	Vincent	
TUT0013	FR 13:00 14:00	HW 402	David Liu	
TUT0014	TH 10:00 11:00	MW 170	Andrew	
TUT0015	FR 11:00 12:00	IC 326	Siyang	
TUT0017	TU 15:00 16:00	AA 208	Aiyaz	
TUT0020	WE 11:00 12:00	BV 264	Eric	
TUT0021	MO 11:00 12:00	HW 408	Ralph	
TUT0022	MO 12:00 13:00	AA 207	Jason	
TUT0023	FR 12:00 13:00	AA 204	Frank	
TUT0025	TH 13:00 14:00	HW 408	Roleen	
TUT0027	TU 11:00 12:00	BV 355	Keegan	
TUT0029	TH 11:00 12:00	IC 120	Lucy	

*Do **not** turn this page until you have received the signal to start.*

This exam consists of 3 questions on 8 pages (including this one). *When you receive the signal to start, please make sure that your copy is complete.*
Proper documentation is required for all functions and code blocks. If you use any space for rough work, indicate clearly what you want marked. Please read all questions thoroughly before starting on any work. To receive full marks on Question 0, draw a smiley face in the top right corner of this page.

The University of Toronto's Code of Behaviour on Academic Matters applies to all University of Toronto Scarborough students. The Code prohibits all forms of academic dishonesty including, but not limited to, cheating, plagiarism, and the use of unauthorized aids. Students violating the Code may be subject to penalties up to and including suspension or expulsion from the University.

0: _____/ 1
1: _____/25
2: _____/17
3: _____/ 2
TOTAL: _____/45

[Use the space below for rough work. This page will not be marked unless you clearly indicate the part of your work that you want us to mark.]

Question 1. [25 MARKS]

Write the output of the following code in the box on the right.

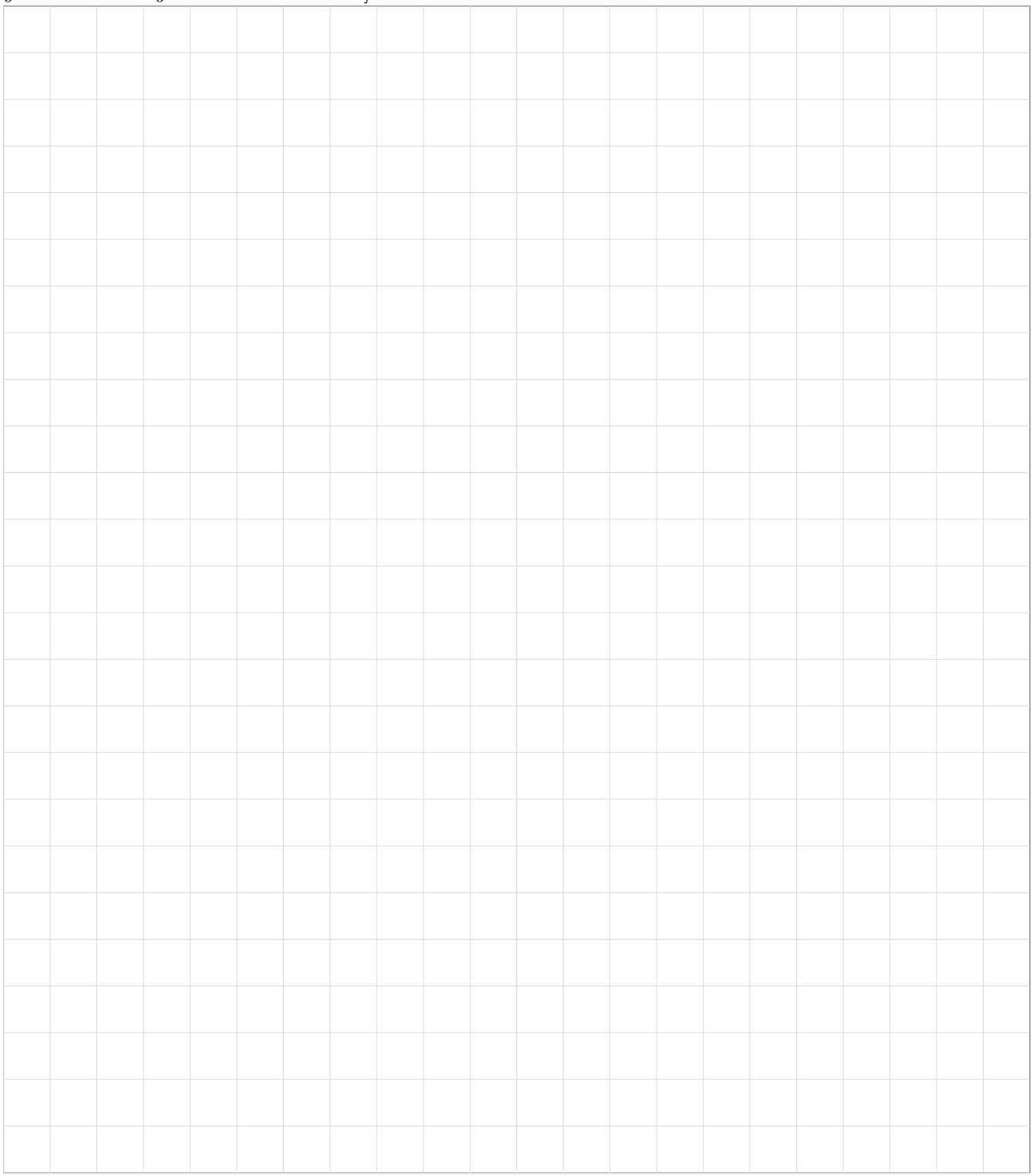
```
def func1(x):
    print(x)
    x = 7
    return x

def func2(x, y):
    print(x + y)
    z = x
    x = y
    y = z
    print(str(x) + str(y))
    return x * y

def func3(x, y, z):
    print(func1(x))
    print(func1(func2(y, z)))
    z = func1(func1(x))
    return x + y + z

a = 3 * 3
b = 4.5 + 4.5
c = 9.0
print("--1--")
print(a, b, c)
print(str(a) + str(b) + str(c))
print(str(a + b + c))
print(a == b, a == c, a is b, a is c)
a = 1
b = 2
c = 3
print("--2--")
c = func1(b)
print(a, b, c)
a = func2(b, c)
print(a, b, c)
c = func2(c, c)
print(a, b, c)
x = 4
y = 5
z = 6
print("--3--")
r = func3(func1(x), func2(x, y), func2(func1(z), z))
```

[Use the space below for rough work. This page will not be marked unless you clearly indicate the part of your work that you want us to mark.]



Question 2. [17 MARKS]

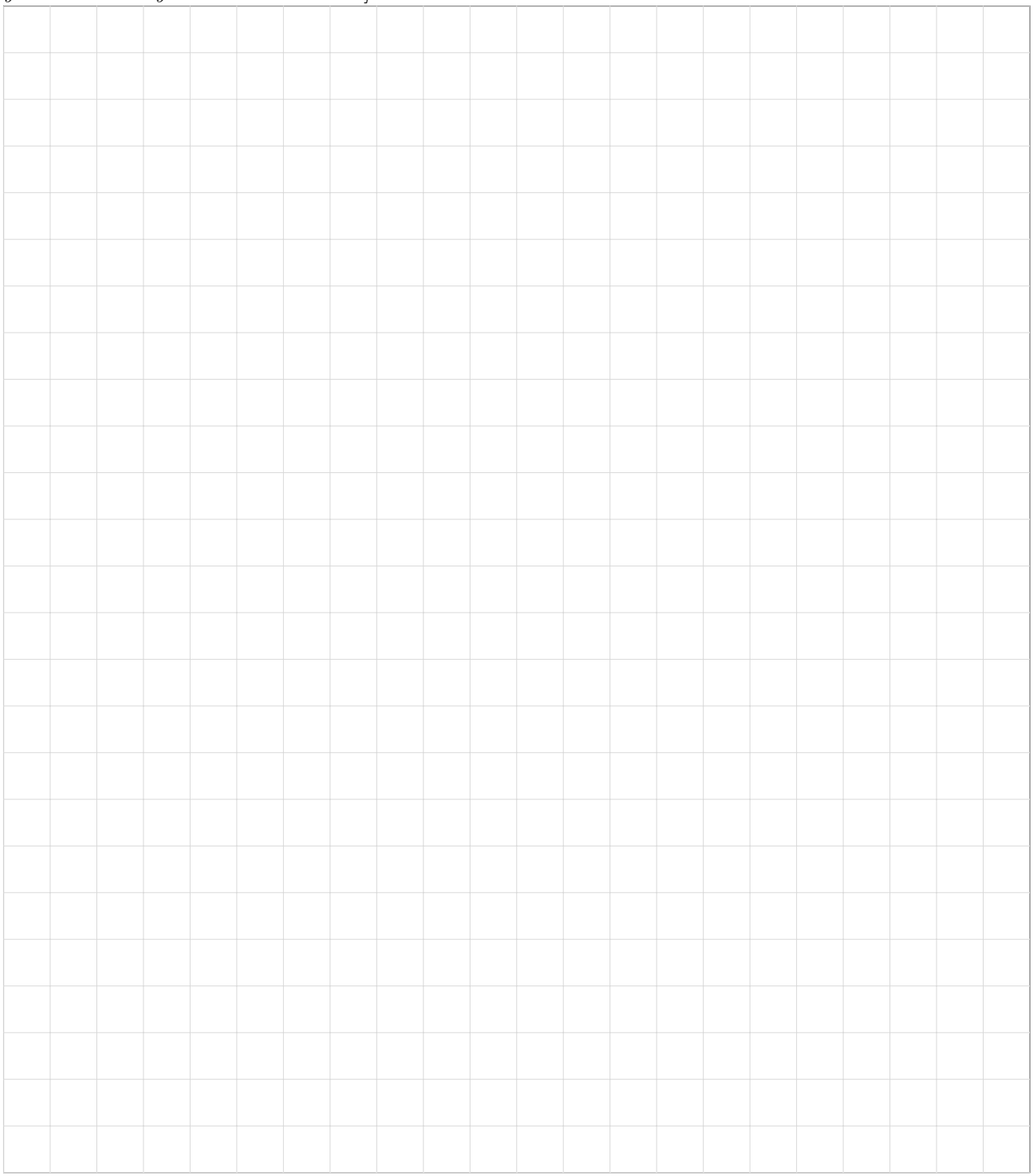
Marzieh's Museum of Mechanical Marvels has an interesting fee structure. Admission is $10 (it's really worth the price to go), but children 12 and under can get in for only $5 on the weekends. Wednesday is Seniors Day, but that means seniors (anyone 70 years old or older) actually pay $11 to get in (told you it was an interesting fee structure). No one under the age of 3 is allowed in at any time.

Part (a) [12 MARKS]

Your job is to create a function in the space below, which will tell Marzieh whether the correct fee has been paid by a customer given their age, the day of the week, and how much they paid.

You may **not** use any if statements, loops or any elements of Python we have not covered in lecture.

[Use the space below for rough work. This page will not be marked unless you clearly indicate the part of your work that you want us to mark.]



Part (b) [2 MARKS]

In the space below, write the first 3 lines of your test file.

Part (c) [3 MARKS]

We won't make you write all the test cases by hand. But calculate how many test cases you would have for this function. Explain your answer.

Question 3. [2 MARKS]

In your own words, **briefly** explain the concept of `granularity`, and why it is relevant to computer science.

[Use the space below for rough work. This page will not be marked unless you clearly indicate the part of your work that you want us to mark.]