

BBM 301 - Programming Languages - Fall 2021 Midterm
November 12, 2021

Name: _____

Student ID number: _____

Please write your name, ID and following honor pledge:

"On my honor, I pledge that I have neither given nor received any unauthorized assistance on this exam. "

"I give permission that my camera recordings will be taken for identification purposes for BBM301 exam and I understand that these recordings will not be used for any other purposes".

and **sign** your answer sheet.

4- [15 pts] Lex evaluation

Consider the following lex file:

```
binary [01]
decimal [0-9]
hexadecimal [0-9A-F]
alphabetic [a-zA-Z]
%%
{alphabetic}{binary}* printf("Valid");
{alphabetic}* printf("X");
{binary}* printf("Y");
{decimal}* printf("W");
{hexadecimal}* printf("Z");
%%
```

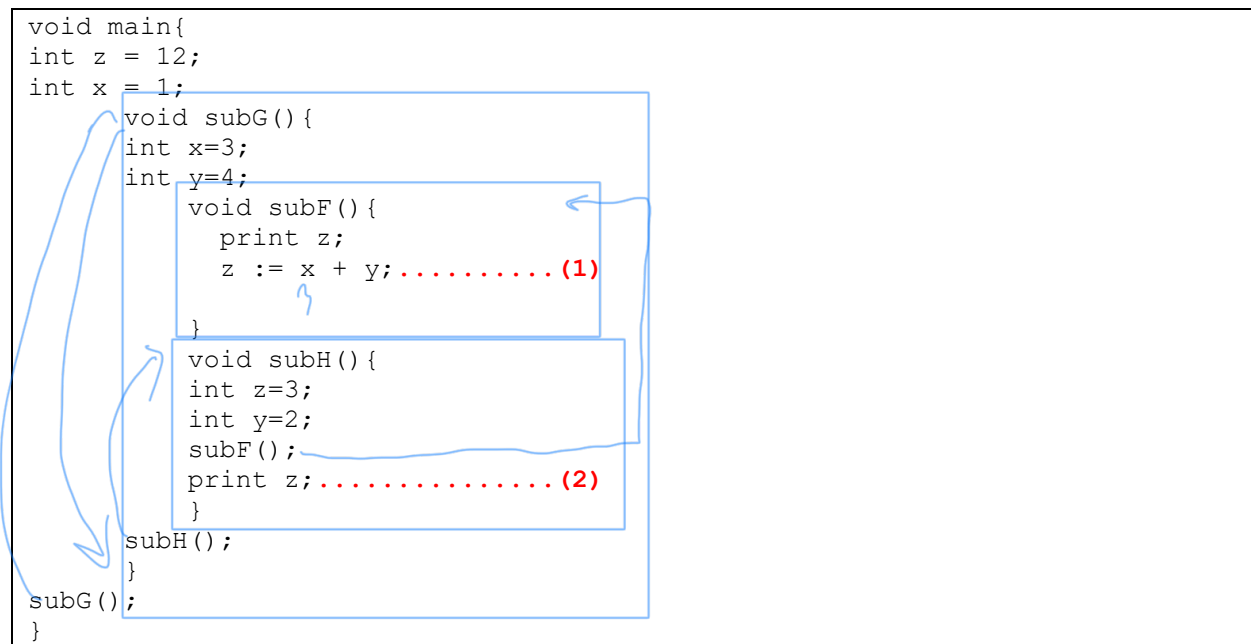
a) What is the output for the input **afdeb091001**?

b) What is the output for the input **00f02AGD**?

a) What is the output for the input **AbC13Ed**?

5- [20 pts] Scope

Consider the following pseudocode:



a) Suppose that the language uses static scoping. What is the output?

12, 7

b) Which names are visible and which names are hidden in the referencing environment Point 1, 2, and 3 when static scoping is used?

	visible	hidden
Point 1	x, y sub G z main	x main
Point 2	z, y sub H x sub G	x, z main y sub G

c) Suppose that the language uses dynamic scoping. What is the output?

3, 5

d) Which names are visible and what names are hidden in the referencing environment Point 1, 2, and 3 when dynamic scoping is used?

	visible	hidden
Point 1	z, y sub H x sub G	y sub G z, x (main)
Point 2	z, y sub H x sub G	x, y y sub G z, x main