# 09 Exam Review

## Pass by value vs pass by reference

Write down the output of this program:

int age=32;

void rejuvenate(int x) {

x = x / 2;

}

void setup() {

println(age);

rejuvenate(age);

println(age);

}

Write down the output of this program:

class Person {

public String name;

}

void accentuate(Person p) {

p.name = "\*\* "+p.name+" \*\*";

}

void setup() {

Person john = new Person();

john.name = "John";

println(john.name);

accentuate(john);

println(john.name);

}

## Methods vs. Functions

Write down the output of this program:

void play() {println("play function");}

class Game {

public void play() {println("play method"); }

}

void setup() {

play();

Game game = new Game();

play();

game.play();

}

## Public vs private

Consider this Processing class:

class Banner {

public String text="Banner Text";

private char symbol='\*';

private String createSymbolString(int numSymbols) {

String result="";

for (int index=0; index<numSymbols; index++)

result+=symbol;

return result;

}

public void display() {

println(createSymbolString(text.length()+4));

println(symbol+" "+text+" "+symbol);

println(createSymbolString(text.length()+4));

}

}

It is designed to display simple pretty banners, e.g. this code:

Banner banner = new Banner();

banner.display();

will produce this output:

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Banner Text \*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

In the display() method, there are a couple of calls to the method createSymbolString() even though createSymbolString() is labeled private. How is that so?

Explain whether each of the following code fragments is correct/incorrect and why:

Banner banner = new Banner();

Banner.text = “Title Page”;

banner.display();

Banner banner = new Banner();

Banner.symbol = ‘#’;

banner.display();

Banner banner = new Banner();

println( banner.createSymbolString(10) );

Banner banner = new Banner();

println( banner.text );

println( banner.symbol );

What is the purpose of a “helper method”? Use the Banner class as an example to illustrate your answer.