

Certificacion Java

Capitulo uno

Review Questions

Antonio De Felipe

Java Academy

2025

The answers to the chapter review questions can be found in the Appendix.

1. Which of the following are legal entry point methods that can be run from the command line? (Choose all that apply.)

- A. `private static void main(String[] args)`
- B. `public static final main(String[] args)`
- C. `public void main(String[] args)`
- D. `public static final void main(String[] args)`
- E. `public static void main(String[] args)`
- F. `public static main(String[] args)`

- A. *El metodo debe ser Public*
- B. *Necesita tener el void com tipo de retorno*
- C. *El Metodo necesita ser static*
- D. *Es correcto, aunque final es redundante*
- E. *Forma clasica del main*
- F. *Incorrecto por falta del void*

2. Which answer options represent the order in which the following statements can be assembled into a program that will compile successfully? (Choose all that apply.)

X: `class Rabbit {}`
Y: `import java.util.*;`
Z: `package animals;`

- A. X, Y, Z
- B. Y, Z, X
- C. Z, Y, X
- D. Y, X
- E. Z, X
- F. X, Z
- G. None of the above

El orden que se debe respetar es:

Package



import



Class

se debe tomar en cuenta que package e Import son opcionales

3. Which of the following are true? (Choose all that apply.)

```
public class Bunny {  
    public static void main(String[] x) {  
        Bunny bun = new Bunny();  
    } }
```

- A. Bunny is a class.
- B. bun is a class.
- C. main is a class.
- D. Bunny is a reference to an object.
- E. bun is a reference to an object.
- F. main is a reference to an object.
- G. The main() method doesn't run because the parameter name is incorrect.

B. Es una referencia a un objeto

C y F. Main es un metodo

D. Bunny es una clase

G. No importa el nombre del Parametro

4. Which of the following are valid Java identifiers? (Choose all that apply.)

- A. _
- B. _helloWorld\$
- C. true
- D. java.lang
- E. Public
- F. 1980_s
- G. _Q2_

Los identificadores validos en Java deben iniciar con una letra guion bajo o \$ y no deben ser palabras reservadas o tener caracteres especiales excepto los ya mencionados

En el caso A no es valido, ya que apartir de Java 9 se convirtio en una palabra reservada

5. Which statements about the following program are correct? (Choose all that apply.)

```
2: public class Bear {  
3:     private Bear pandaBear;  
4:     private void roar(Bear b) {  
5:         System.out.println("Roar!");  
6:         pandaBear = b;  
7:     }  
8:     public static void main(String[] args) {  
9:         Bear brownBear = new Bear();  
10:        Bear polarBear = new Bear();  
11:        brownBear.roar(polarBear);  
12:        polarBear = null;  
13:        brownBear = null;  
14:        System.gc(); } }
```

- A. The object created on line 9 is eligible for garbage collection after line 13.
- B. The object created on line 9 is eligible for garbage collection after line 14.
- C. The object created on line 10 is eligible for garbage collection after line 12.
- D. The object created on line 10 is eligible for garbage collection after line 13.
- E. Garbage collection is guaranteed to run.
- F. Garbage collection might or might not run.
- G. The code does not compile.

Las referencias creadas en líneas 9 y 10 apuntan a un oso panda, por lo que necesitamos eliminar las 2 referencias antes de que el garbage collector pueda llevarse este objeto
Invocar al garbage collector no garantiza que se ejecute, eso lo decide jvm

6. Assuming the following class compiles, how many variables defined in the class or method are in scope on the line marked on line 14?

```
1: public class Camel {  
2:     { int hairs = 3.000_0; }  
3:     long water, air=2;  
4:     boolean twoHumps = true; 3  
5:     public void spit(float distance) {  
6:         var path = ""; 5
```

56 Chapter 1 • Building Blocks

```
7:     { double teeth = 32 + distance++; }  
8:     while(water > 0) { 6  
9:         int age = twoHumps ? 1 : 2;  
10:        short i=-1; 7  
11:        for(i=0; i<10; i++) {  
12:            var Private = 2;  
13:        }  
14:        // SCOPE  
15:    }  
16: }  
17: }
```

- A. 2
- B. 3
- C. 4
- D. 5
- E. 6
- F. 7
- G. None of the above

Lineas 2, 7, 11 solo son accesibles para sus bloques

2 y 11 por estar en bloques de instancia y el 11 por estar dentro de un for

El resto de variables estan en el scope

8. Which of the following code snippets about var compile without issue when used in a method? (Choose all that apply.)

- A. var spring = null;
- B. var fall = "leaves";
- C. var evening = 2; evening = null;
- D. var night = Integer.valueOf(3);
- E. var day = 1/0;
- F. var winter = 12, cold;
- G. var fall = 2, autumn = 2;
- H. var morning = ""; morning = null;

var no puede ser inicializado como null

se puede asignar un valor null despues pero solo si antes poseia un dato de tipo diferente a primitivo

no puede usarse para almacenar mas de un dato

no puede usarse en una asignacion multiple de variables

9. Which of the following are correct? (Choose all that apply.)

- A. An instance variable of type float defaults to 0.
- B. An instance variable of type char defaults to null.
- C. A local variable of type double defaults to 0.0.
- D. A local variable of type int defaults to null.
- E. A class variable of type String defaults to null.
- F. A class variable of type String defaults to the empty string "".
- G. None of the above.

variables locales no tienen un valor default

variables de Instancia si tienen valor default, en el caso de A es

incorrecto ya que para float es 0.0

B es incorrecto, ya que los primitivos no tienen null como valor por default

una variable de clase string tiene como valor default null

10. Which of the following expressions, when inserted independently into the blank line, allow the code to compile? (Choose all that apply.)

```
public void printMagicData() {  
    var magic = _____;  
    System.out.println(magic);  
}
```

- A. 3_1
- B. 1_329_.0
- C. 3_13.0
- D. 5_291._2
- E. 2_234.0_0
- F. 9__6
- G. _1_3_5_0

el - no puede ir al inicio, final ni al lado de un punto

11. Given the following two class files, what is the maximum number of imports that can be removed and have the code still compile?

```
// Water.java  
package aquarium;  
public class Water { }
```

8 Chapter 1 • Building Blocks

```
// Tank.java  
package aquarium;  
import java.lang.*;  
import java.lang.System;  
import aquarium.Water;  
import aquarium.*;  
public class Tank {  
    public void print(Water water) {  
        System.out.println(water); } }
```

- A. 0
- B. 1
- C. 2
- D. 3
- E. 4
- F. Does not compile

Java lang se importa automaticamente y al estar en el mismo package no hay que importar aquarium

12. Which statements about the following class are correct? (Choose all that apply.)

```
1: public class ClownFish {  
2:     int gills = 0, double weight=2;  
3:     { int fins = gills; }  
4:     void print(int length = 3) {  
5:         System.out.println(gills);  
6:         System.out.println(weight);  
7:         System.out.println(fins);  
8:         System.out.println(length);  
9:     } }
```

- A. Line 2 generates a compiler error.
- B. Line 3 generates a compiler error.
- C. Line 4 generates a compiler error.
- D. Line 7 generates a compiler error.
- E. The code prints 0.
- F. The code prints 2.0.
- G. The code prints 2.
- H. The code prints 3.

A no compila al usar mas de un tipo en la multi declaracion
lo cual no esta permitido

C no compila al querer asignar un valor en parametros, java no
acepta

D no compila ya que fins esta fuera de scope

y al ser cierto algun error de compilacion el codigo no puede
imprimir nada.

13. Given the following classes, which of the following snippets can independently be inserted in place of `INSERT IMPORTS HERE` and have the code compile? (Choose all that apply.)

```
package aquarium;
public class Water {
    boolean salty = false;
}

package aquarium.jellies;
public class Water {
    boolean salty = true;
}

package employee;
INSERT IMPORTS HERE
public class WaterFiller {
    Water water;
}

A. import aquarium.*;
B. import aquarium.Water;
   import aquarium.jellies.*;
C. import aquarium.*;
   import aquarium.jellies.Water;
D. import aquarium.*;
   import aquarium.jellies.*;
E. import aquarium.Water;
   import aquarium.jellies.Water;
F. None of these imports can make the code compile.
```

Al tener dos clases llamadas water, necesito importar una implicitamente y otra explicitamente para poder llamarlas y que el programa sepa a cual me refiero

water

aquarium. Water

aquarium. Jellies. Water

water

a funciona por que usaria solo una clase water

14. Which of the following statements about the code snippet are true? (Choose all that apply.)

```
3: short numPets = 5L;  
4: int numGrains = 2.0;  
5: String name = "Scruffy";  
6: int d = numPets.length();  
7: int e = numGrains.length;  
8: int f = name.length();
```

60 Chapter 1 • Building Blocks

- A. Line 3 generates a compiler error.
- B. Line 4 generates a compiler error.
- C. Line 5 generates a compiler error.
- D. Line 6 generates a compiler error.
- E. Line 7 generates a compiler error.
- F. Line 8 generates a compiler error.

A. Short no puede contener un long

B. Int no puede contener un double

D y e int no puede hacer uso de metodos por ser Primitivo

15. Which of the following statements about garbage collection are correct? (Choose all that apply.)

- A. Calling `System.gc()` is guaranteed to free up memory by destroying objects eligible for garbage collection.
- B. Garbage collection runs on a set schedule.
- C. Garbage collection allows the JVM to reclaim memory for other objects.
- D. Garbage collection runs when your program has used up half the available memory.
- E. An object may be eligible for garbage collection but never removed from the heap.
- F. An object is eligible for garbage collection once no references to it are accessible in the program.
- G. Marking a variable `final` means its associated object will never be garbage collected.

llamar al gc no es garantia de que se ejecute

llamar al gc no es garantia de que se ejecute

No se sabe cuando el gc se ejecute

un objeto puede quedar sin referencias y no ser eliminado, por ejemplo si acaba el programa

17. What lines are printed by the following program? (Choose all that apply.)

```
1: public class WaterBottle {  
2:     private String brand;  
3:     private boolean empty;  
4:     public static float code;  
5:     public static void main(String[] args) {  
6:         WaterBottle wb = new WaterBottle();
```

```
7:     System.out.println("Empty = " + wb.empty);  
8:     System.out.println("Brand = " + wb.brand);  
9:     System.out.println("Code = " + code);  
10:    } }
```

- A. Line 8 generates a compiler error.
- B. Line 9 generates a compiler error.
- C. Empty =
- D. Empty = false
- E. Brand =
- F. Brand = null
- G. Code = 0.0
- H. Code = 0f

No hay errores de compilacion, y las variables se inicializan pero no se asignan por lo que toman valores default

String=null

boolean = False

float=0. Of

la opcion G es correcta porque al imprimir el valor default de un float no se imprime la F, quedando 0.0

18. Which of the following statements about var are true? (Choose all that apply.)

- A. A var can be used as a constructor parameter.
- B. The type of a var is known at compile time.
- C. A var cannot be used as an instance variable.
- D. A var can be used in a multiple variable assignment statement.
- E. The value of a var cannot change at runtime.
- F. The type of a var cannot change at runtime.
- G. The word var is a reserved word in Java.

var no puede usarse como Parametro

El tipo de var se conoce en la compilacion

No se puede usar en asignacion multiple

var puede cambiar de valor pero no de tipo en la ejecucion

var no es una palabra reservada

19. Which are true about the following code? (Choose all that apply.)

```
var num1 = Long.parseLong("100");
var num2 = Long.valueOf("100");
System.out.println(Long.max(num1, num2));
```

- A. The output is 100.
- B. The output is 200.
- C. The code does not compile.
- D. num1 is a primitive.
- E. num2 is a primitive.

- num1 es un long
- num2 es un Long (object)

- Long. max compara ambos, al ser iguales devuelve el valor 100
- parse Long retorna un primitivo por lo que es mas util en operaciones

value of retorna un objeto por lo que es mas util si se usara en colecciones o me todos

20. Which statements about the following class are correct? (Choose all that apply.)

```
1: public class PoliceBox {  
2:     String color;  
3:     long age;  
4:     public void PoliceBox() {  
5:         color = "blue";  
6:         age = 1200;  
7:     }  
8:     public static void main(String []time) {  
9:         var p = new PoliceBox();  
10:        var q = new PoliceBox();  
11:        p.color = "green";  
12:        p.age = 1400;  
13:        p = q;  
14:        System.out.println("Q1="+q.color); null  
15:        System.out.println("Q2="+q.age); Ø  
16:        System.out.println("P1="+p.color); null  
17:        System.out.println("P2="+p.age); Ø  
18:    } }
```

- A. It prints Q1=blue.
- B. It prints Q2=1200.
- C. It prints P1=null.
- D. It prints P2=1400.
- E. Line 4 does not compile.
- F. Line 12 does not compile.
- G. Line 13 does not compile.
- H. None of the above.

- La linea 4 es un metodo, no un constructor, esto por el void
Los valores de p y q son default
- las referencias asignadas en linea 11 y 12
son eliminadas en la linea 13
- En la linea 13 ambos objetos quedan con valores default

21. What is the output of executing the following class?

```
1: public class Salmon {  
2:     int count;  
3:     { System.out.print(count+"-"); }  
4:     { count++; }  
5:     public Salmon() {  
6:         count = 4;  
7:         System.out.print(2+"-");  
8:     }  
9:     public static void main(String[] args) {  
10:        System.out.print(7+"-");  
11:        var s = new Salmon();  
12:        System.out.print(s.count+"-"); } }
```

q: 7-

3: 0-

7: 2-

12: 4-

- A. 7-0-2-1-
- B. 7-0-1-
- C. 0-7-2-1-
- D. 7-0-2-4- Correct!
- E. 0-7-1-
- F. The class does not compile because of line 3.
- G. The class does not compile because of line 4.
- H. None of the above.

Inicia en el main imprimiendo 7-

Al crear el objeto s de salmon se llama la clase

Se sigue el orden de ejecución con los bloques de instancia

Despues pasa por el constructor

Finaliza en linea 12

22. Given the following class, which of the following lines of code can independently replace INSERT CODE HERE to make the code compile? (Choose all that apply.)

```
public class Price {  
    public void admission() {  
        INSERT CODE HERE  
        System.out.print(amount);  
    } }
```

- A. int Amount = 0b11;
- B. int amount = 9L;
- C. int amount = 0xE;
- D. int amount = 1_2.0;
- E. double amount = 1_0_.0;
- F. int amount = 0b101;
- G. double amount = 9_2.1_2;
- H. double amount = 1_2_.0_0;

A no se respeta el nombre de la variable

B no se puede poner un float en un Int

D el Valor es un double

E y H hay un error en el - y . ya que no pueden ser adyacentes

23. Which statements about the following class are true? (Choose all that apply.)

```
1:  public class River {  
2:      int Depth = 1;  
3:      float temp = 50.0;  
4:      public void flow() {  
5:          for (int i = 0; i < 1; i++) {  
6:              int depth = 2;  
7:              depth++;  
8:              temp--;  
9:          }  
10:         System.out.println(depth);  
11:         System.out.println(temp); }  
12:     public static void main(String... s) {  
13:         new River().flow();  
14:     } }
```

64 Chapter 1 • Building Blocks

- A. Line 3 generates a compiler error.
- B. Line 6 generates a compiler error.
- C. Line 7 generates a compiler error.
- D. Line 10 generates a compiler error.
- E. The program prints 3 on line 10.
- F. The program prints 4 on line 10.
- G. The program prints 50.0 on line 11.
- H. The program prints 49.0 on line 11.

A se genera un error al tratar de asignar un double a un float
D se genera un error ya que la variable no esta en el scope