1. Which of the following Java operators can be used with `boolean` variables? (Choose all that apply.)

   A. `==`

   B. `+`

   C. `--`

   D. `!`

   E. `%`

   F. `~`

   G. Cast with `(boolean)`

A, D
El libro tambien dice que es G
Entonces la respuesta completa es A, D, G

2. What data type (or types) will allow the following code snippet to compile? (Choose all that apply.)

```
byte apples = 5;
short oranges = 10;
_____ bananas = apples + oranges;
```

   A. `int`

   B. `long`

   C. `boolean`

   D. `double`

   E. `short`

   F. `byte`

A, B, D
boolean solo puede tener valores true o false
short tendríamos que castear el resultado a short short bananas = (short) apples + orange;
byte igual tendriamos que hacer un cast en el a byte en el resultado byre short bananas = (byte) apples + orange;

3. What change, when applied independently, would allow the following code snippet to compile? (Choose all that apply.)

```
3: long ear = 10;
4: int hearing = 2 * ear;
```

A. No change; it compiles as is.
B. Cast `ear` on line 4 to `int`.
C. Change the data type of `ear` on line 3 to `short`.
D. Cast `2 * ear` on line 4 to `int`.
E. Change the data type of `hearing` on line 4 to `short`.
F. Change the data type of `hearing` on line 4 to `long`.

A, B, C, D, F
A no seria porque al definir ear como long es resultado es un long y no podemos meterlo en un int
La respuesta seria B, C, D, F

4. What is the output of the following code snippet?

```
3: boolean canine = true, wolf = true;
4: int teeth = 20;
5: canine = (teeth != 10) ^ (wolf=false);
6: System.out.println(canine+", "+teeth+", "+wolf);
```

A. `true, 20, true`
B. `true, 20, false`
C. `false, 10, true`
D. `false, 20, false`
E. The code will not compile because of line 5.
F. None of the above.

La respuesta es B

5. Which of the following operators are ranked in increasing or the same order of precedence? Assume the + operator is binary addition, not the unary form. (Choose all that apply.)

A. `+, *, %, --`

B. `++, (int), *`

C. `=, ==, !`

D. `(short), =, !, *`

E. `*, /, %, +, ==`

F. `!, ||, &`

G. `^, +, =, +=`

C, E, G
Segun la tabla de la pagina 68
A es correcta
B es incorrecta porque va descendente
C es correcta
D es incorrecta y va salteando el orden
E es incorrecta porque falla ya que + es el binario
F | | este operador esta mas abajo que & entonces ya no sigue un orden ascendente
G falla despues de + ya que = esta mas abajo
Las respuestas correctas son A, C

6. What is the output of the following program?

```
1: public class CandyCounter {
2:    static long addCandy(double fruit, float vegetables) {
3:       return (int)fruit+vegetables;
4:    }
5:
6:    public static void main(String[] args) {
7:       System.out.print(addCandy(1.4, 2.4f) + ", ");
8:       System.out.print(addCandy(1.9, (float)4) + ", ");
9:       System.out.print(addCandy((long)(int)(short)2, (float)4)); } }
```

A. `4, 6, 6.0`

B. `3, 5, 6`

C. `3, 6, 6`

D. `4, 5, 6`

E. The code does not compile because of line 9.

F. None of the above.

La respuesta es F este lo vimos en clase y el problema esta en la linea 3

7. What is the output of the following code snippet?

```
int ph = 7, vis = 2;
boolean clear = vis > 1 & (vis < 9 || ph < 2);
boolean safe = (vis > 2) && (ph++ > 1);
boolean tasty = 7 <= --ph;
System.out.println(clear + "-" + safe + "-" + tasty);
```

A. `true-true-true`
B. `true-true-false`
C. `true-false-true`
D. `true-false-false`
E. `false-true-true`
F. `false-true-false`
G. `false-false-true`
H. `false-false-false`

La respuesta es D

8. What is the output of the following code snippet?

```
4: int pig = (short)4;
5: pig = pig++;
6: long goat = (int)2;
7: goat -= 1.0;
8: System.out.print(pig + " - " + goat);
```

A. `4 - 1`
B. `4 - 2`
C. `5 - 1`
D. `5 - 2`
E. The code does not compile due to line 7.
F. None of the above.

La respuesta es A hay una trampa en linea 5 ya que aunque incrementa después se queda con el valor anterior por definirse asi mismo

9. What are the unique outputs of the following code snippet? (Choose all that apply.)

```
int a = 2, b = 4, c = 2;
System.out.println(a > 2 ? --c : b++);
System.out.println(b = (a!=c ? a : b++));
System.out.println(a > b ? b < c ? b : 2 : 1);
```

A. 1
B. 2
C. 3
D. 4
E. 5
F. 6
G. The code does not compile.

Esta es la respuesta que di en un principio B, D
La respuesta correcta es A, B, D
hay una trampa en cuestion a b porque lo deja como 5 ya que se esta asignando a si mismo
el funcionamiento del operador ternario es evaluar la
condicion ? si es verdadero pasa esto : si es falso pasa esto otro
en la System.out.println(a > b ? b < c ? b : 2 : 1); tendria que ser o leerse con parentesis
System.out.println(a > b ? (b < c ? b : 2) : 1); entonces va directamente al 1

10. What are the unique outputs of the following code snippet? (Choose all that apply.)

```
short height = 1, weight = 3;
short zebra = (byte) weight * (byte) height;
double ox = 1 + height * 2 + weight;
long giraffe = 1 + 9 % height + 1;
System.out.println(zebra);
System.out.println(ox);
System.out.println(giraffe);
```

A. 1
B. 2
C. 3
D. 4
E. 5
F. 6
G. The code does not compile.

G esto ya que la segunda linea tiene byte y yo pense que luego luego marcaba error pero la explicación del libro dice que es porque los hace int y pues no se puede meter al short

11. What is the output of the following code?

```
11: int sample1 = (2 * 4) % 3;
12: int sample2 = 3 * 2 % 3;
13: int sample3 = 5 * (1 % 2);
14: System.out.println(sample1 + ", " + sample2 + ", " + sample3);
```

A. `0, 0, 5`
B. `1, 2, 10`
C. `2, 1, 5`
D. `2, 0, 5`
E. `3, 1, 10`
F. `3, 2, 6`
G. The code does not compile.

No recordaba bien que hacia él % puse A
La respuesta correcta es D recordar que % indica el residuo de la división y evalua de izquierda a derecha

12. The _____ operator increases a value and returns the original value, while the _____ operator decreases a value and returns the new value.

A. post-increment, post-increment
B. pre-decrement, post-decrement
C. post-increment, post-decrement
D. post-increment, pre-decrement
E. pre-increment, pre-decrement
F. pre-increment, post-decrement

La respuesta es D

13. What is the output of the following code snippet?

```
boolean sunny = true, raining = false, sunday = true;
boolean goingToTheStore = sunny & raining ^ sunday;
boolean goingToTheZoo = sunday && !raining;
boolean stayingHome = !(goingToTheStore && goingToTheZoo);
System.out.println(goingToTheStore + "-" + goingToTheZoo
   + "-" +stayingHome);
```

A. `true-false-false`
B. `false-true-false`
C. `true-true-true`
D. `false-true-true`
E. `false-false-false`
F. `true-true-false`
G. None of the above

La respuesta es F

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

A. The return value of an assignment operation expression can be `void`.
B. The inequality operator (`!=`) can be used to compare objects.
C. The equality operator (`==`) can be used to compare a `boolean` value with a numeric value.
D. During runtime, the `&` and `|` operators may cause only the left side of the expression to be evaluated.
E. The return value of an assignment operation expression is the value of the newly assigned variable.
F. In Java, `0` and `false` may be used interchangeably.
G. The logical complement operator (`!`) cannot be used to flip numeric values.

La respuesta es la B, E, G

15. Which operators take three operands or values? (Choose all that apply.)

A. `=`

B. `&&`

C. `*=`

D. `? :`

E. `&`

F. `++`

G. `/`

La respuesta es D

16. How many lines of the following code contain compiler errors?

```
int note = 1 * 2 + (long)3;
short melody = (byte)(double)(note *= 2);
double song = melody;
float symphony = (float)((song == 1_000f) ? song * 2L : song);
```

A. 0

B. 1

C. 2

D. 3

E. 4

La respuesta es B

17. Given the following code snippet, what are the values of the variables after it is executed? (Choose all that apply.)

```
int ticketsTaken = 1;
int ticketsSold = 3;
ticketsSold += 1 + ticketsTaken++;
ticketsTaken *= 2;
ticketsSold += (long)1;
```

A. `ticketsSold` is 8.
B. `ticketsTaken` is 2.
C. `ticketsSold` is 6.
D. `ticketsTaken` is 6.
E. `ticketsSold` is 7.
F. `ticketsTaken` is 4.
G. The code does not compile.

La repuesta es C, F

18. Which of the following can be used to change the order of operation in an expression? (Choose all that apply.)

A. `[ ]`
B. `< >`
C. `( )`
D. `\ /`
E. `{ }`
F. `" "`

La respuesta es C aquí podría haber confusión por los corchetes y otras cosas pero ya están ocupados para otras funciones asi que solo los parentesis pueden cambiar el orden

19. What is the result of executing the following code snippet? (Choose all that apply.)

```
3: int start = 7;
4: int end = 4;
5: end += ++start;
6: start = (byte)(Byte.MAX_VALUE + 1);
```

A. `start` is `0`.
B. `start` is `-128`.
C. `start` is `127`.
D. `end` is `8`.
E. `end` is `11`.
F. `end` is `12`.
G. The code does not compile.
H. The code compiles but throws an exception at runtime.

La repuesta correcta es B y F

20. Which of the following statements about unary operators are true? (Choose all that apply.)

A. Unary operators are always executed before any surrounding numeric binary or ternary operators.
B. The `-` operator can be used to flip a `boolean` value.
C. The pre-increment operator (`++`) returns the value of the variable before the increment is applied.
D. The post-decrement operator (`--`) returns the value of the variable before the decrement is applied.
E. The `!` operator cannot be used on numeric values.
F. None of the above

A, B, D
Aqui confundi un poco los operadores B es incorrecta porque se usa para numeros nadamas
la respuesta correcta es A, D ,E

21. What is the result of executing the following code snippet?

```
int myFavoriteNumber = 8;
int bird = ~myFavoriteNumber;
int plane = -myFavoriteNumber;
var superman = bird == plane ? 5 : 10;
System.out.println(bird + "," + plane + "," + --superman);
```

A. `-7,-8,9`
B. `-7,-8,10`
C. `-8,-8,4`
D. `-8,-8,5`
E. `-9,-8,9`
F. `-9,-8,10`
G. None of the above

La respuesta es E