**0.** What is the value for the next expressions?

* 1. int A = 4 + 2 \* 5 \_\_\_\_14\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. int B = -23 \* 2 / 5\_\_\_\_\_-9\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  3. int C = (9 + 3 ) \* 5 / 4 % 7 + 1 \_\_\_\_\_2\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  4. int X = (int) 3.5 + 5.09 – 14 / 4\_\_\_4.59\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  5. float Y = 2.1 \* (1.5 + 3.0 \* 4.1) \_\_\_\_\_28.98\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  6. double var = 15 \* 14 – 3 \* 7 \_\_\_\_\_\_189\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  7. float V= (int) 3 + 4 \* (8.5 \* ( 4 – (9 + 3)/ 6))\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  8. float Z=4 \* 3 \* 5 + 8 \* 4 \* 2 – 5 \_\_\_\_79\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  9. int M= 4.5 – 40 / 5 \_\_\_\_\_\_-3\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  10. int F= (-5) % (-2) \_\_\_\_\_\_-1\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**1**.- Follow the next pieces of pseudo-code and write down on the line the best answer.

a) int a = -1;    
int b = 1;    
if (a != b)    
   a = a\*2  final value of a is  \_\_-2\_\_\_

b)   int a;  int b;    
a = 5;    
b = 5;    
if (a<b)    
   a = a + 1;    
else  final value of a is \_\_5\_\_\_  
   b++;  final value of b is  \_6\_\_\_\_

c)  int a;  int b;    
a = 1000;    
b = 500;    
if (a>=b)    
   a = a/2;  final value of a is \_\_500\_\_\_  
else  final value of b is \_\_500\_\_\_  
   b = a;

d)   int a;    
  a = 10;    
  if ( a != 5 )  final value of a is \_\_-10\_\_\_  
     a = a \* -1;   
 

e)  double x = 17.6;   
 double y = 12.4;   
  if ( x + y != 29.9 ) {   
    y = x + y;    
  }  final value of x is \_\_17.6\_\_\_      
  else { final value of y is \_\_30\_\_\_      
    x = y + x;    
  }

**f)  int i = 11;   
 int j = 4;   
 if ( j != i ) {    
    if ( j + i < 7)   
         j = i \* j;   
    else   
       j = i / j;   
  } final value of i is \_11\_\_\_\_    
  else final value of j is \_2\_\_\_\_     
     i = i \* j;**   
 

**g)  int  i = 11;   
  int j = 4;   
  if ( j != i )   
      i = i \* j;   
  else   {    final value of i is \_44\_\_\_\_     
   if ( j + i < 7) final value of j is \_4\_\_\_\_   
       j = i \* j;   
   else   
        j = i / j;   
  }**

h)   String letrero = "chale";   
  if (letrero == "chole") {    
    if (letrero == "chava")   
        letrero = "chusma";   
    else   
        letrero = "chivo";   
  }   
  else {    
    if (letrero == "chulo")    
        letrero = "cholo";   
    else final value of letrero is “chica”   
       letrero = "chica";   
  }

 i)   int a = 23.0;    
  if ( a >= 0 )  final value of a is \_\_3\_\_\_    
     a = a % 10;

j) int i = 54;  int j = 4;   
  if ( j >= i )    
    if ( j + i > 57)   
        j++;   
   else   
        j--;   
  else   
       if ( j + i > 57)   
       j\*=i; final value of i is \_\_54\_\_\_    
   else    
       i/=j; final value of j is \_\_216\_\_\_  

**h)**

double valor1=9;

valor1++;

double valor2=3;

Valor2--; => 2

valor1 /= valor2; => 5.0

valor1 += valor2; => 7.0

valor1 -= valor2; => 5.0

Print " Valor2 =" + valor2 => **Valor2 = 2.0**

Print " Valor1 =" + valor1 => **Valor1 = 5.0**

valor1 = 2; => 2.0

valor2 = 1+ valor1++; => 4.0

Print " Valor2 =" + valor2 => **Valor2 = 4.0**

valor1 = 2; => valor1 = 2.0

valor2 = ++valor1 + 1; => 4.0

Print " Valor2 =" + valor2 => **Valor2 = 4.0**

}

}

Loops\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a)   int  a = 10;    
  while ( a != 0 )  final value of a es \_\_0\_\_\_     
    a = a - 1;

b)   int x = 0;   
 int y = 56742;   
 while ( x < 4 ) {   
   y = y / 2;  final value of x es \_\_4\_\_\_     
   x++;   
 }  final value of y es \_\_3546\_\_\_

d) int a=10;     
 while ( a > 0 )     
    a--;  final value of a es \_\_0\_\_\_

e) int x = 0;    
 int y = 1;    
 while ( x < 4 ) {    
   y = y \* 2;   final value of x es \_\_4\_\_\_    
   x++;  final value of y es \_\_16\_\_\_

f) int i= 0;    
  int j= 0;    
  while ( i < 5) {    
    j=j+i; => J = 10  final value of j es \_\_10\_\_\_

    i++;  => I = 5 final value of i es \_\_5\_\_\_    
  }

f.1)

int i = 0;

int j = 0;

for (i = 0; i < 5; i++)

j++;

**ñ)**   int x = 0;   
  for (int k = 1024; k >= 1; k = k/2)    
     x++ final value of x es \_10\_\_\_

**o)** int x = 0;   
  for (int i=0; i<3; i++)   
   for (int j=0; j<3; j++)   
         x++;

I j x

0 0 1

0 1 2

0 2 3

0 3 3

1 0 4

1 1 5

final value of x es \_\_\_\_\_

**p)** int x = 0;   
 for (int i=0; i<3; i++)   
   for (int j=i; j<3; j++)   
         x++; final value of x es \_\_\_\_\_

**q) int x = 0;   
  for (int i=0; i<3; i++)   
   for (int j=0; j<i; j++)   
         x++; final value of x es \_\_\_\_**

**Int x = 0, Int i = 0, Int j = 0**

**While (i<3) {**

**While (j<i) {**

**x++**

**j++**

**}**

**J = 0**

**i ++**

**}**

**2. “Pruebas de escritorio”**

1. for (b = -12; b <= 8; b = b + 1) 

Print b

1. int s = 0;

int r = 5;

while ( r>1) {

s = s + r;

r = r - 1;}

Print r + “ “ + s

1. **Develop the pseudo-code in pairs:**
   1. Validate a number between 1 and 50 and write an asterisk pyramid of the integer!

Give me a number between 1 and 50

**75**

That’s not a positive integer!

Give me a number between 1 and 50

8

1 \*

2 \*\*

3 \*\*\*

4 \*\*\*\*

5 \*\*\*\*\*

6 \*\*\*\*\*\*

7 \*\*\*\*\*\*\*

8 \*\*\*\*\*\*\*\*

Want to try again? (Y/N)

* 1. Determine if n as an integer number is a perfect number. A perfect number is a positive integer that is equal to the sum of its proper positive divisors, that is, the sum of its positive divisors excluding the number itself (example 6 = 1+2+3 is a perfect number).

Example. n=6  
Output: ***6 is perfect***

Example n=7  
Output: ***7 is not perfect***

* 1. Count the number of digits from a positive integer.

Example n=17

Output: 17 ***has 2 digits***