**Data types and Pseudocode - Activity**

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

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

**Find the final value for the next pieces of code:**

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

b)   int a;  int b

a = 5

b = 5

if (a<b)

a = a +1

else  final value for a \_\_\_\_\_

b = b + 1  final value for b \_\_\_\_\_

c)  int a;  int b    
 a = 1000    
 b = 500    
 if (a >= b)    
   a = a / 2  final value for a \_\_\_\_\_

else  final value for b \_\_\_\_\_  
   b = a

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

e)   double x = 17.6   
 double y = 12.4   
  if ( x + y != 29.9 ) {   
    y = x + y    
 }  final value for x \_\_\_\_\_      
   else { final value for y \_\_\_\_\_      
    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 for i \_\_\_\_\_    
  else  final value for j \_\_\_\_\_     
     i = i \* j

g)  int  i = 11   
  int j = 4   
  if ( j != i )   
      i = i \* j   
  else   {    final value for i\_\_\_\_\_     
   if ( j + i < 7) final value for j\_\_\_\_\_   
       j = i \* j   
   else   
        j = i / j   
  }

h)    letrero = "chale"   
 if (letrero equals "chole") {    
 if (letrero equals "chava")   
 letrero = "chusma"   
  else   
  letrero = "chivo"   
 }   
 else {    
    if (letrero equals "chulo")    
    letrero = "cholo"   
    else final value for “letrero” \_\_\_\_\_    
       letrero = "chica"   
  }

 i)   int a = 23;    
  if ( a >= 0 )  final value for a \_\_\_\_\_    
     a = a % 10

j)  int i = 54;  int j = 4   
  if ( j >= i )    
    if ( j + i > 57)   
        j = j + 1   
   else   
        j = j - 1   
   else   
       if ( j + i > 57)   
       j = j \* i final value for i \_\_\_\_\_    
   else    
       i = i / j final value for j \_\_\_\_\_  

**Design a pseudocode for the next problems:**

* 1. Que te pida un número entero positivo menor de 50 por teclado (valida que no se exceda) y dibuja un asterisco por cada número que te den, por ejemplo

Dame un número entero positivo menor a 50

**75**

Eso no es correcto, aprende a contar, intenta de nuevo!

Dame un número entero positivo menor a 50

8

\*

\*\*

\*\*\*

\*\*\*\*

\*\*\*\*\*

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

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

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

¿Quieres intentar con otro numero? (S/N)

* 1. Given an integer n, determine whether it is perfect or not. 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; 6 is perfect)

Example.

Given n = 14  
Output: ***14 is a perfect number***

Given n = 7  
Output: ***7 is not a perfect number***

* 1. Count the number of digits for an integer n.

Example.

Given n = 17  
Output: 17 ***has 2 digits***