**Домашнее задание по курсу**

**«Базовые компоненты интернет-технологий»**

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**Описание задания лабораторной работы.**

Разработать программу для решения квадратного уравнения.

**Текст программы на языке F#.**

#light  
module MyNamespace.MyModule  
open System  
  
printfn "Enter value for first parameter"  
let A = Console.**ReadLine**()  
let a = Convert.**ToInt32**(A)  
printfn "Enter value for second parameter"  
let B = Console.**ReadLine**()  
let b = Convert.**ToInt32**(B)  
printfn "Enter value for third parameter"  
let C = Console.**ReadLine**()  
let c = Convert.**ToInt32**(C)  
  
let **Answ101\_1**(a1,c1) = Math.**Sqrt**(Math.**Abs**(-**float**(c1)/**float**(a1)))                                       // a<0 b=0 c>0 || a>0 b=0 c<0   
let **Answ101\_2**(a1,c1) = Math.**Sqrt**(Math.**Abs**(**float**(c1)/**float**(a1)))                                        // a>40 b=0 c>0 || a<0 b=0 c<0   
let **Answ011**(b1,c1) = -**float**(c1)/**float**(b1)                                                              // a=0 b<>0 c<>0  
let **Answ110**(a1,b1) = -**float**(b1)/**float**(a1)                                                              // a<>0 b<>0 c=0  
let **Disc**(a1,b1,c1) = b1\*b1-4\*a1\*c1  
let **Answ111\_1\_1**(a1,b1,c1) = -**float**(b1)/**float**(a1\*2) + **float**(**Disc**(a1,b1,c1))/**float**(a1\*2)                 // D>0  
let **Answ111\_1\_2**(a1,b1,c1) = -**float**(b1)/**float**(a1\*2) - Math.**Sqrt**(**float**(**Disc**(a1,b1,c1)))/**float**(a1\*2)      // D>0  
let **Answ111\_2\_Re**(a1,b1,c1) = -**float**(b1)/**float**(a1\*2)                                                    // D=0 && D<0  
let **Answ111\_2\_Im**(a1,b1,c1) = Math.**Sqrt**(**float**(-**Disc**(a1,b1,c1)))/**float**(a1\*2)                             // D<0  
  
printfn "Entered values: a = %i, b = %i, c = %i" a b c  
if(a=0)&&(b=0)&&(c=0) then printfn "x - any value"                                                     //000  
if (a=0)&&(b=0)&&**not**(c=0) then printfn "No roots"                                                      //001  
if (a=0)&&**not**(b=0)&&(c=0) then printfn "x = 0"                                                         //010  
if (a=0)&&**not**(b=0)&&**not**(c=0) then  printf "x = %f" (**Answ011**(b,c))                                      //011  
if **not**(a=0)&&(b=0)&&(c=0) then printfn "x1 = x2 = 0"                                                   //100  
if (a>0)&&(b=0)&&(c<0) then printfn "x = +-%f" (**Answ101\_1**(a,c))                                        //101 1  
if (a<0)&&(b=0)&&(c>0) then printfn "x = +-%f" (**Answ101\_1**(a,c))                                        //101 1  
if (a<0)&&(b=0)&&(c<0) then printfn "x = +-%f i" (**Answ101\_2**(a,c))                                      //101 2  
if (a>0)&&(b=0)&&(c>0) then printfn "x = +-%f i" (**Answ101\_2**(a,c))                                      //101 2  
if **not**(a=0)&&**not**(b=0)&&(c=0) then printfn "x1 = 0; x2 = %f" (**Answ110**(a,b))                             //110  
if **not**(a=0)&&**not**(b=0)&&**not**(c=0)&&(**Disc**(a,b,c)>0) then printfn "x1 = %f; x2 = %f" (**Answ111\_1\_1**(a,b,c))(**Answ111\_1\_2**(a,b,c))  
if **not**(a=0)&&**not**(b=0)&&**not**(c=0)&&(**Disc**(a,b,c)=0) then printfn "x1 = x2 = %f" (**Answ111\_2\_Re**(a,b,c))  
if **not**(a=0)&&**not**(b=0)&&**not**(c=0)&&(**Disc**(a,b,c)<0) then printfn "x = %f +- %f i" (**Answ111\_2\_Re**(a,b,c))(**Answ111\_2\_Im**(a,b,c))  
Console.**ReadKey**(true)

**Результаты выполнения программы, экранные формы:**

