Given the following method invocation:

x.foo(a*2,b+1), where a and b are in int type, x is an object of VD. What are the elements on the operand stack when executing the instruction **invokevirtual VD/foo(II)V** ?

Top of the stack: result of expression b+1 ,

Below the top: result of expression a*2 ,

Bottom: address of x .

After the invokevirtual instruction is executed, the number of elements on the operand stack will decrease by 2

Decrease by 3

Let variable a and b have index 2 and 3, respectively, where variable a is in int type and variable b is in array type whose element type is int. The following java code:

b[3] = a;

will be translated into following JVM code:

aload_3

iconst_3

iload_2

iastore

Given the following Java method declaration:

int foo(VD x,boolean y[], float m), where VD is the name of a class.

Write the type of the above function using the rule of JVM?

Trả lời: (LVD;[ZF)I

Let a and b be variables whose indexes are 2 and 3, respectively, where b is in int type and a is in array type of int type. The following java code:

b = a[2];

will be translated into following JVM code:

aload_2

iconst_2

iaload

istore_3

Given the following Java method declaration:

static int foo(long x,int y,int z,float t)

What is the index of parameter z in the local variable array?

Trả lời: 2

The following java code:

new A(2,3)

will be translated into following JVM code:

new A

dup

iconst 2

iconst 3

invovespecial A/init(II)V

invokevirtual A(II)V	new A	iconst 1	dup	invovespecial A/init(II)V
iconst 2	pop	invokespecial A(I)V	iconst 3	

After executing instruction isub, the number of elements on the stack is

Chọn một:

- a. decreased by 2
- b. increased by 1
- c. increased by 2
- d. unchanged
- e. decreased by 1

Given the following Java method declaration:

int foo(long x,int y,int z,float t)

What is the index of parameter z in the local variable array?

Chọn một:

- a. 4
- b. 0
- c. 3
- d. 2

(4)

Classwork: a có index = 2, b có index = 3

a[2] = b[3] : aload_0 -> iconst_2 -> aload_1 -> iconst_3 -> iaload ->iastore

a = b[a + 3] * b[14 % a] :

aload_3 -> iload_2 -> iconst_3 -> iadd ->iaload

aload_3 -> bipush 14 -> iload_2 -> irem -> iaload

imul -> istore 2

b [7 - a] = a + b[a * 7 + 1]

aload 3 -> bipush 7 -> iload 2 -> isub

iload 2

aload 3 -> iload 2 -> bipush 7 -> imul -> bipush 1 -> iadd

iaload

iadd

iastore

a = new A(new B(), 2, 3)

new A -> dup

new B -> dup -> invokespecial B/<init>()V

bipush 2

bipush 3

invokespecial A/<init>(LB;II)V

astore 3