

## Exercise 2

### *Virtual Machine*

In this exercise, you will translate Java source code to Java Card byte code, and vice versa. You should become familiar with Java Card byte codes, and understand how the virtual machine works internally.

#### Part 1

Translate the following Java source code to byte code:

```
public static void method1(short a, short b) {  
    for (short i = 4; i < 10; i++) {  
        a += (b * i);  
    }  
}
```

#### Part 2

Translate the following byte code to Java source code:

*Local Variable Stack:*

S:00    a (S)

*Code:*

P:0000	1c	sload_0	a (S)
P:0001	10 0a	bspush	10 (0x0a)
P:0003	6f 07	if_scmlpe	+7 (P:000a)
P:0005	1c	sload_0	a (S)
P:0006	10 0a	bspush	10 (0x0a)
P:0008	45	smul	
P:0009	78	sreturn	
P:000a	1c	sload_0	a (S)
P:000b	08	sconst_5	
P:000c	45	smul	
P:000d	78	sreturn	