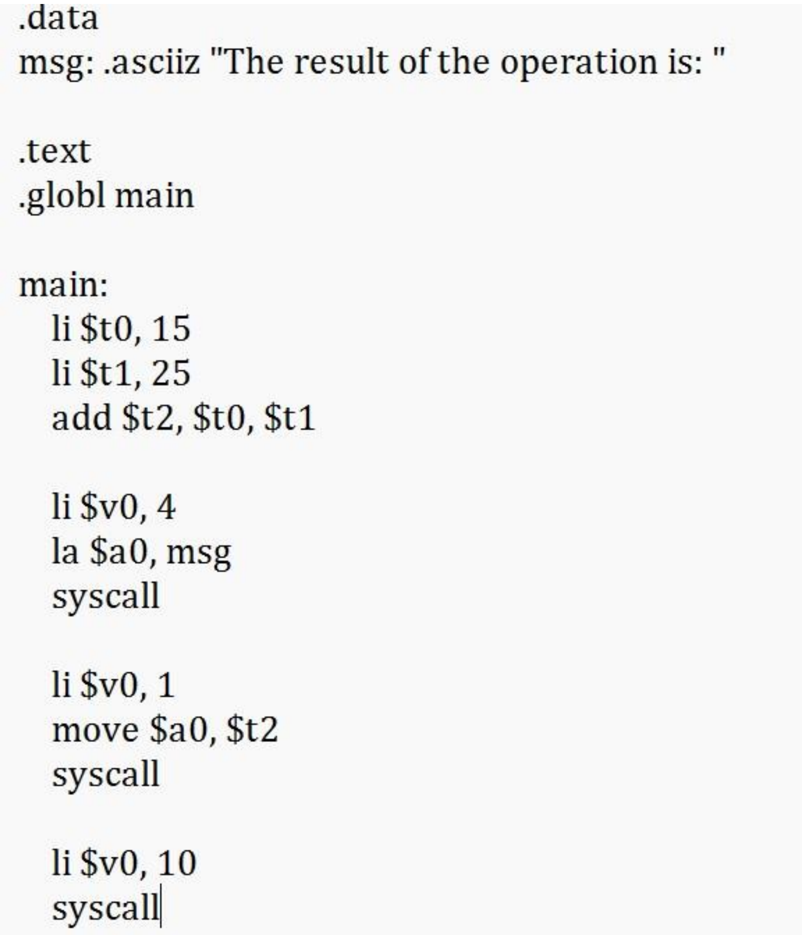
EXERCISE

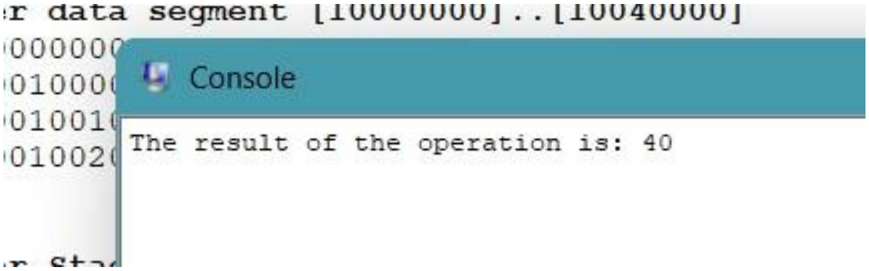
1. **Addition of Two Integers**

Write a MIPS program to add **15** and **25**, then print the result.



```
.data
msg: .asciiz "The result of the operation is: "

.text
.globl main

main:
   li $t0, 15
   li $t1, 25
   add $t2, $t0, $t1

   li $v0, 4
   la $a0, msg
   syscall

   li $v0, 1
   move $a0, $t2
   syscall

   li $v0, 10
   syscall
```

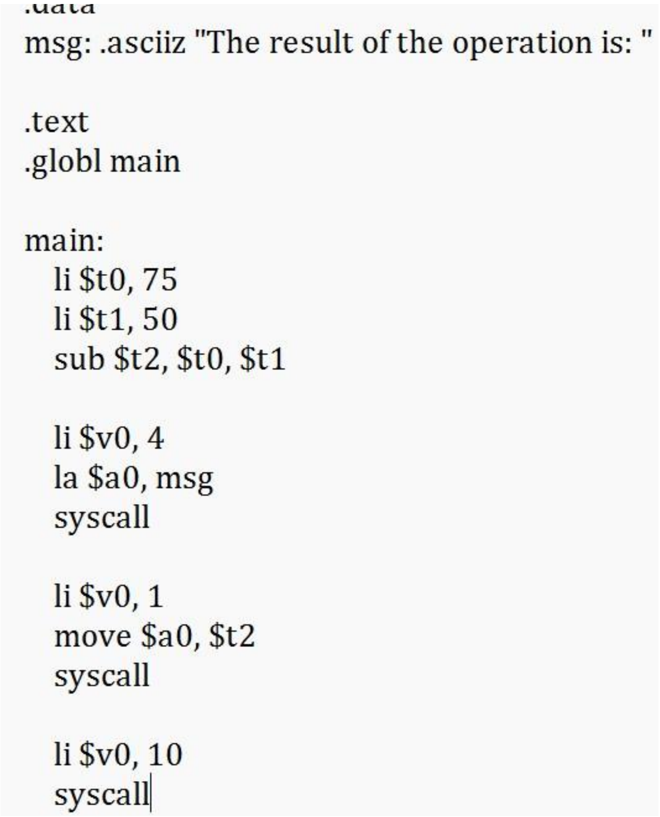
Output



```
The result of the operation is: 40
```

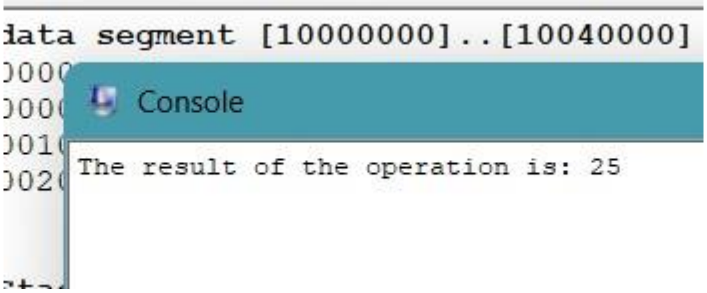
2. **Subtraction of Two Integers**

Write a MIPS program to subtract **50** from **75** and print the result.



```
.data
msg: .asciiz "The result of the operation is: "

.text
.globl main

main:
   li $t0, 75
   li $t1, 50
   sub $t2, $t0, $t1

   li $v0, 4
   la $a0, msg
   syscall

   li $v0, 1
   move $a0, $t2
   syscall

   li $v0, 10
   syscall
```

Output

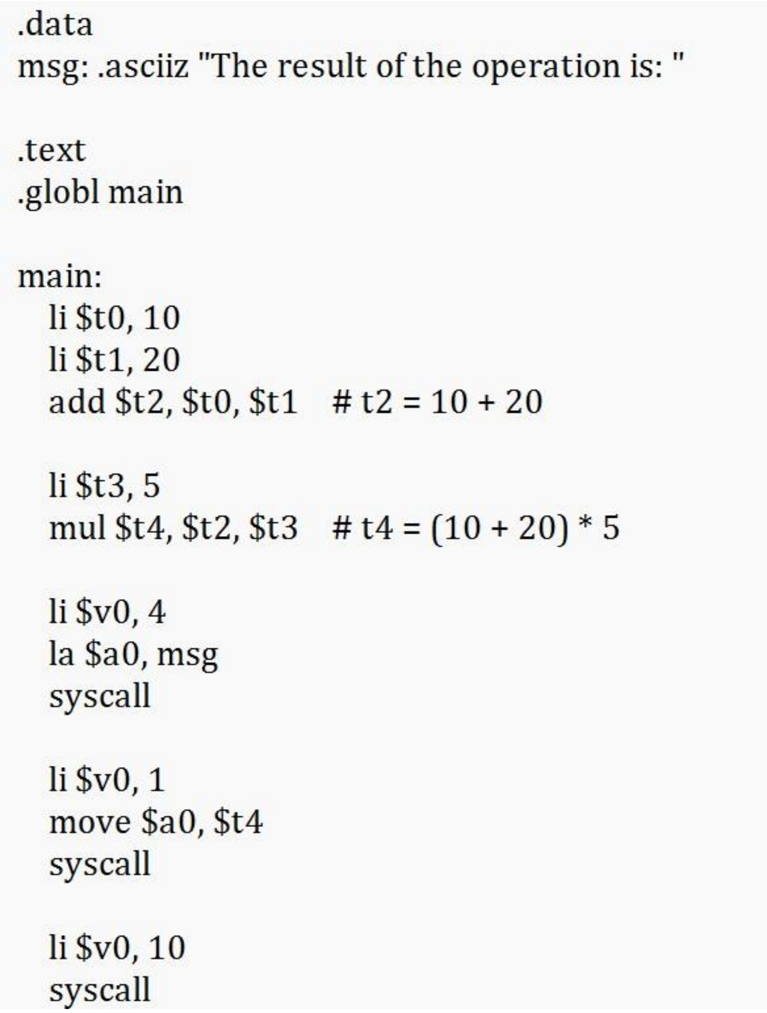


```
data segment [10000000]..[10040000]
```

```
The result of the operation is: 25
```

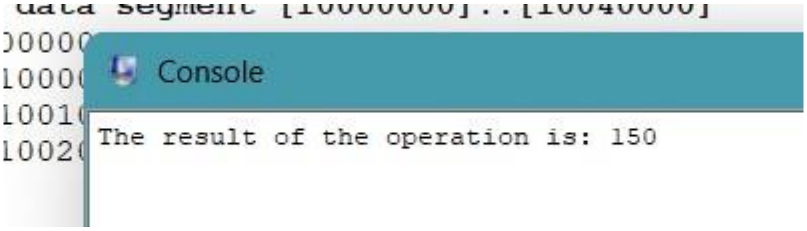
3. **Complex Equation (Addition and Multiplication)**

Write a MIPS program to calculate and print the result of:
(10+20)×5



```
.data
msg: .asciiz "The result of the operation is: "

.text
.globl main

main:
   li $t0, 10
   li $t1, 20
   add $t2, $t0, $t1    # t2 = 10 + 20

   li $t3, 5
   mul $t4, $t2, $t3    # t4 = (10 + 20) * 5

   li $v0, 4
   la $a0, msg
   syscall

   li $v0, 1
   move $a0, $t4
   syscall

   li $v0, 10
   syscall
```

Output

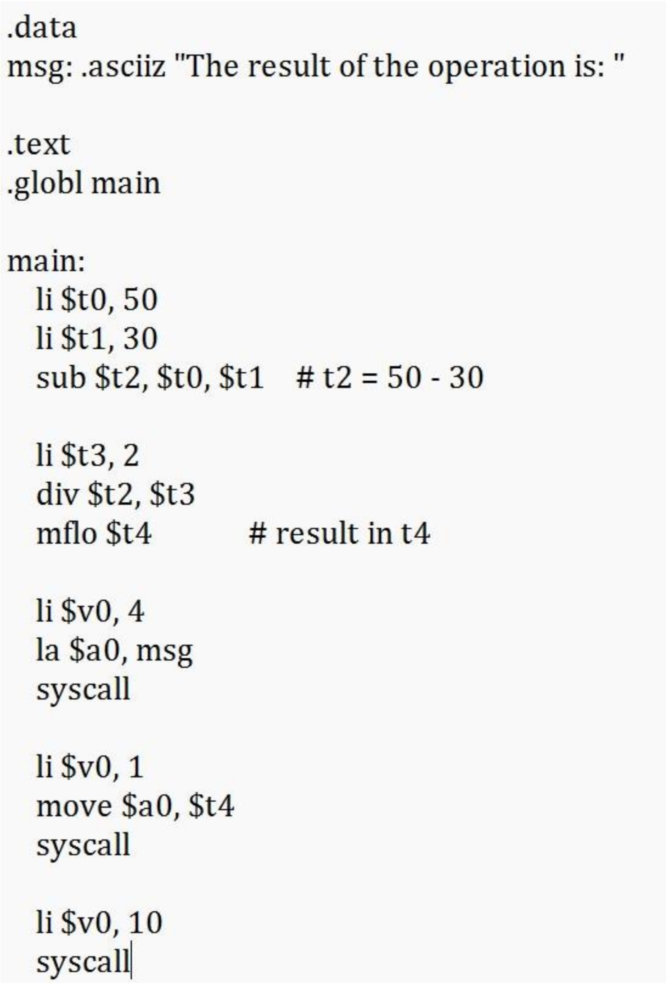


```
The result of the operation is: 150
```

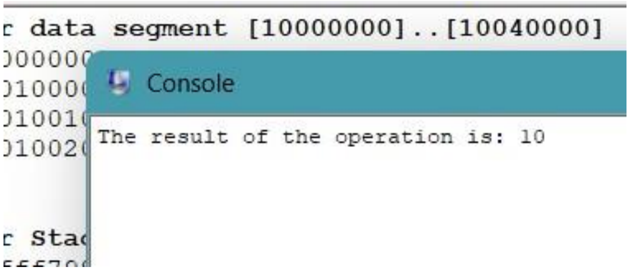
4. **Complex Equation (Subtraction and Division)**

Write a MIPS program to calculate and print the result of:

(50−30)/2he result of the operation is:" followed by an integer result, e.g., 42.



```
.data
msg: .asciiz "The result of the operation is: "

.text
.globl main

main:
   li $t0, 50
   li $t1, 30
   sub $t2, $t0, $t1    # t2 = 50 - 30

   li $t3, 2
   div $t2, $t3
   mflo $t4           # result in t4

   li $v0, 4
   la $a0, msg
   syscall

   li $v0, 1
   move $a0, $t4
   syscall

   li $v0, 10
   syscall
```

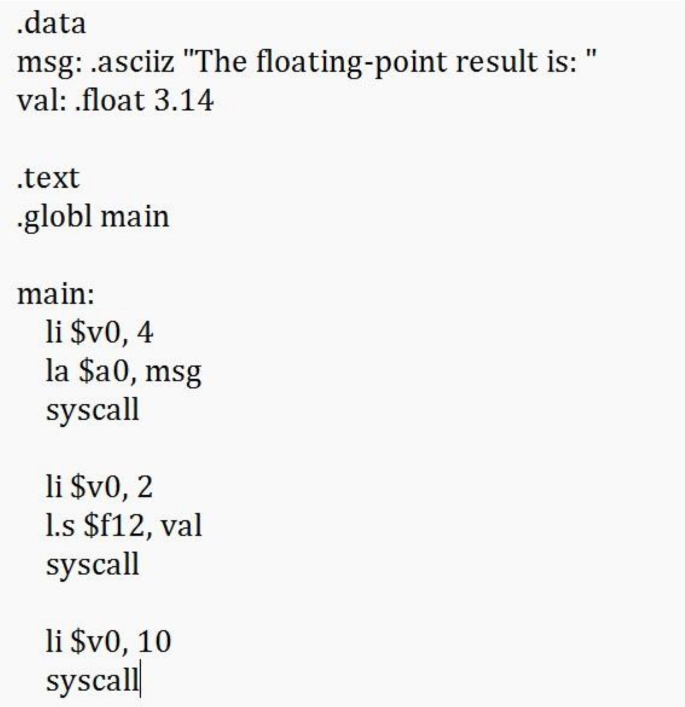


```
r data segment [10000000]..[10040000]
The result of the operation is: 10
```

5. **String with Float**

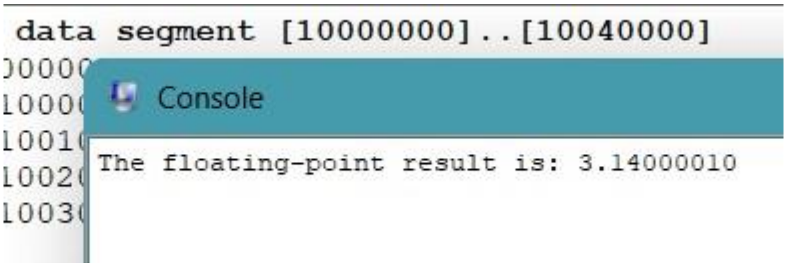
Write a MIPS program to print the message:

"The floating-point result is:" followed by a floating-point value, e.g., 3.14.



```
.data
msg: .asciiz "The floating-point result is: "
val: .float 3.14

.text
.globl main

main:
   li $v0, 4
   la $a0, msg
   syscall

   li $v0, 2
   l.s $f12, val
   syscall

   li $v0, 10
   syscall
```

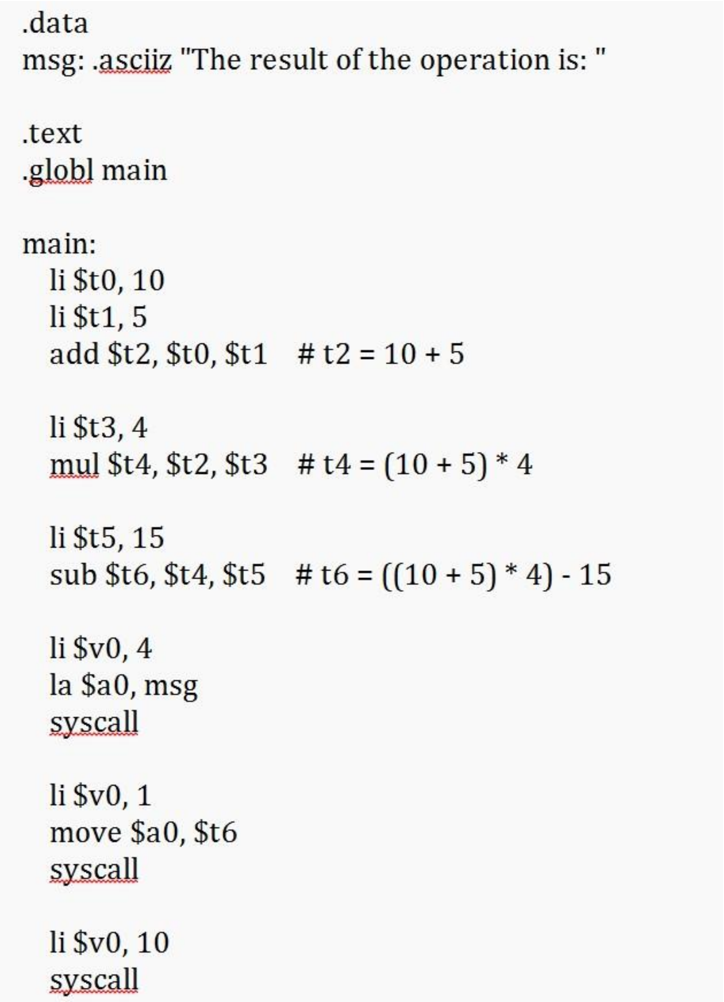
Output



```
The floating-point result is: 3.14000010
```

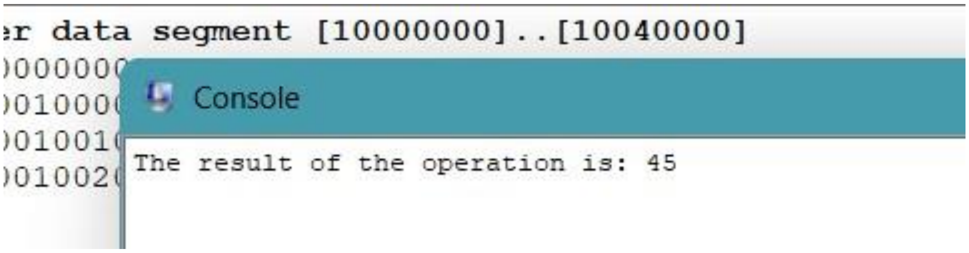
6. **Equation with Multiple Operations**

Write a MIPS program to compute and print the result of the equation:
((10+5)×4)−15



```
.data
msg: .asciiz "The result of the operation is: "

.text
.globl main

main:
   li $t0, 10
   li $t1, 5
   add $t2, $t0, $t1    # t2 = 10 + 5

   li $t3, 4
   mul $t4, $t2, $t3    # t4 = (10 + 5) * 4

   li $t5, 15
   sub $t6, $t4, $t5    # t6 = ((10 + 5) * 4) - 15

   li $v0, 4
   la $a0, msg
   syscall

   li $v0, 1
   move $a0, $t6
   syscall

   li $v0, 10
   syscall
```

Output



```
er data segment [10000000]..[10040000]
)000000
)010000
)010010
)010020
```

```
The result of the operation is: 45
```