

第九回プログラミング言語 練習問題回答例

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練習問題①

times を用いた方法

```
a=[5,4,2,7,6]

min = a[0]
max = a[0]
(a.length-1).times{ |i|
  if min > a[i+1] then
    min = a[i+1]
  end

  if max < a[i+1] then
    max = a[i+1]
  end
}

p a
print( " max --> ", max, "\n" )
print( " min --> ", min, "\n" )
```

```
Z:~ruby>ruby sample.rb
[5, 4, 2, 7, 6]
max --> 7
min --> 2
```

練習問題①

each を用いた方法

```
a=[5,4,2,7,6]

min = a[0]
max = a[0]
a.each{ |i|
  if min > i then
    min = i
  end

  if max < i then
    max = i
  end
}

p a
print( " max --> ", max, "\n" )
print( " min --> ", min, "\n" )
```

```
Z:~ruby>ruby sample.rb
[5, 4, 2, 7, 6]
max --> 7
min --> 2
```

練習問題③

配列の宣言方法

```
a=Array.new(5)
b=Array.new(5)
c=Array.new(5)

a.length.times{ |i|
  a[i] = (i+1)
  b[i] = (i+1) * (i+1)
  c[i] = (i+1) **3
}

p a
p b
p c
```

```
a=[]
b=[]
c=[]

5.times{ |i|
  a[i] = (i+1)
  b[i] = (i+1) * (i+1)
  c[i] = (i+1) **3
}

a.length では不可能

p a
p b
p c
```

```
Z:~ruby>ruby sample.rb
[1, 2, 3, 4, 5]
[1, 4, 9, 16, 25]
[1, 8, 27, 64, 125]
```

練習問題③

```
a=[4,3,6,9,1]
b=[1,9,5,2,3]
x=[]
y=0

a.length.times{ |i|
  x[i] = a[i] + b[i]
  y += a[i] * b[i]
}

p a
p b
p x
p y
```

```
Z:~ruby>ruby sample.rb
[4, 3, 6, 9, 1]
[1, 9, 5, 2, 3]
[5, 12, 11, 11, 4]
82
```

練習問題④

```
x=[]

i = 0
loop{
  line=gets.chomp
  break if line == "q"
  x[ i ] = line.to_i
  i += 1
}

p x
```

```
Z:~ruby>ruby sample.rb
4
5
6
7
12
q
[4, 5, 6, 7, 12]
```

練習問題⑤

```
x = [ 3 , 4 , 9 , 6 , 2 ]  
p x
```

```
(x.length/2).times{ |i|  
  work = x[i]  
  x[i] = x[x.length-1-i]  
  x[x.length-1-i] = work  
}
```

```
p x
```

```
Z:¥ruby>ruby sample.rb  
[3, 4, 9, 6, 2]  
[2, 6, 9, 4, 3]
```

練習問題⑥

```
# coding: Windows-31J  
a=[]  
20.times{ |i|  
  a[i] = rand( 100 )  
}  
p a
```

```
flag = 0  
count = 1  
max_count = 1  
(a.length-1).times{ |i|  
  if a[i] < a[i+1] and flag == 1 then  
    count += 1  
  elsif a[i] < a[i+1] and flag == 0 then  
    count += 1  
    flag = 1  
  else  
    flag = 0  
    if count > max_count then  
      max_count = count  
    end  
    count = 1  
  end  
end  
print( " 最長の部分列の長さは ", max_count , "\n" )
```

```
Z:¥Ruby>ruby sample.rb  
[11, 76, 83, 43, 61, 27, 27, 52, 68, 91, 26, 56, 78, 1, 56, 10, 16, 80, 72, 70]  
最長の部分列の長さは 4
```