

第十一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

```
a=[]
3.times { |j|
  a[j] = []
  3.times { |i|
    if i == j then
      a[j][i] = 1
    else
      a[j][i] = 0
    end
  }
}
p a
```

```
a=[]
3.times { |j|
  a[j] = []
  3.times { |i|
    if i == (2 - j) then
      a[j][i] = 1
    else
      a[j][i] = 0
    end
  }
}
p a
```

練習問題②

```
a=[]
count = 1;
3.times { |j|
  a[j] = []
  3.times { |i|
    if i == 1 then
      a[j][i] = count
    else
      a[j][i] = 0
    end
    count += 1
  }
}
p a
```

```
a=[]
count = 1;
3.times { |j|
  a[j] = []
  3.times { |i|
    if i+j != 2 then
      a[j][i] = count
    else
      a[j][i] = 0
    end
    count += 1
  }
}
p a
```

練習問題③

```
a = [
  [ 1, 2, 3 ],
  [ 4, 5, 6 ],
  [ 7, 8, 9 ],
  [ 10, 11, 12 ]
]
a[0].length.times { |j|
  a.length.times { |i|
    print( a[i][j], " " )
  }
}
print( "\n" )
```

練習問題④(和と差の計算)

```
a = [
  [1,2,3],
  [4,5,6],
  [7,8,9]
]

b = [
  [9,8,7],
  [6,5,4],
  [3,2,1]
]

c = []
a.length.times { |i|
  c[i] = []
  a[i].length.times { |j|
    c[i][j] = a[i][j] + b[i][j];
  }
}

d = []
a.length.times { |i|
  d[i] = []
  a[i].length.times { |j|
    d[i][j] = a[i][j] - b[i][j]
  }
}

print( "c ----> \n" )
p c
print( "\n d ----> \n" )
p d
```

練習問題④(積の計算)

```
a = [
  [1,2,3],
  [4,5,6],
  [7,8,9]
]

b = [
  [9,8,7],
  [6,5,4],
  [3,2,1]
]

e = []
(0..a.length-1).each { |i|
  e[i] = []
  (0..a[i].length-1).each { |k|
    sum = 0
    (0..b.length-1).each { |j|
      sum += a[i][j] * b[j][k]
    }
    e[i][k] = sum
  }
}

print( "e ---->\n" )
(0..e.length-1).each { |i|
  (0..e[i].length-1).each { |j|
    print( e[i][j], " " )
  }
}

print( "\n" )
```

練習問題⑤

```
count = 0
sentence = []
open("HumptyDumpty.txt") { |f|
  while line = f.gets do
    sentence[ count ] = line
    count +=1
  end
}
```

```
(count-1).downto(0){ |i|
  puts( sentence[ i ] )
}
```

```
Z:\Ruby>ruby sample.rb
Couldn't put Humpty together again.
All the king's horses and all the king's men
Humpty Dumpty had a great fall.
Humpty Dumpty sat on a wall.
```