

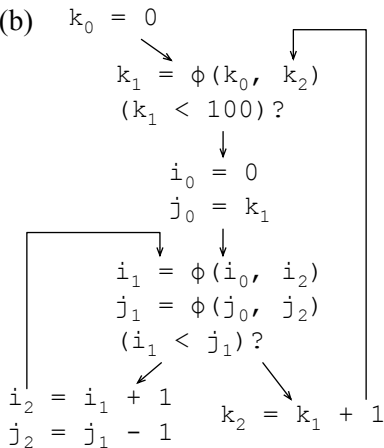
(a)

```

k = 0
while k < 100:
    i = 0
    j = k
    while i < j:
        i = i + 1
        j = j - 1
    k = k + 1

```

(b)



(c)

```

K0 = 0
K1 = phi(K0, K2)
I0 = 0
J0 = K1
I1 = phi(I0, I2)
J1 = phi(J0, J2)
I2 = I1 + 1
J2 = J1 - 1
K2 = K1 + 1

```

(d)

```

I[I0] = [0, 0]
I[I1] = [0, +inf]
I[I2] = [1, +inf]
I[J0] = [0, +inf]
I[J1] = [-inf, +inf]
I[J2] = [-inf, +inf]
I[K0] = [0, 0]
I[K1] = [0, +inf]
I[K2] = [1, +inf]

```