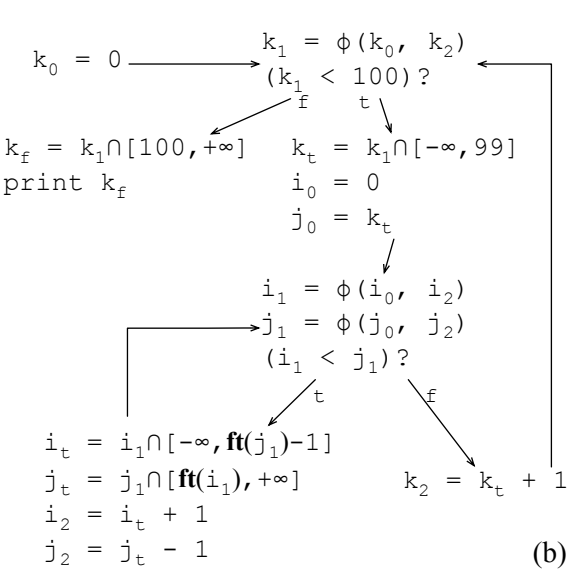
```
k = 0

while k < 100:

  i = 0

  j = k

  while i < j:

    i = i + 1

    j = j - 1

  k = k + 1

print k
```

(a)



(b)

$$
\begin{aligned}
K_0 &= 0 \\
K_t &= K_1 \cap [-\infty,\ 99] \\
K_f &= K_1 \cap [100,\ +\infty] \\
K_1 &= \phi(K_0,\ K_2) \\
I_0 &= 0 \\
j_0 &= K_t \\
I_1 &= \phi(I_0,\ I_2) \\
J_1 &= \phi(J_0,\ J_2) \\
I_f &= I_1 \cap [-\infty,\ \mathbf{ft}(J_1)-1] \\
J_t &= J_1 \cap [\mathbf{ft}(I_1),\ +\infty] \\
I_2 &= I_t + 1 \\
J_2 &= J_t - 1 \\
K_2 &= K_t + 1
\end{aligned}
$$

(c)

$$
\begin{aligned}
I[i_0] &= [0,\ 0] \\
I[i_1] &= [0,\ 99] \\
I[i_2] &= [1,\ 99] \\
I[i_t] &= [0,\ 98] \\
I[j_0] &= [0,\ 99] \\
I[j_1] &= [-1,\ 99] \\
I[j_2] &= [-1,\ 98] \\
I[j_t] &= [0,\ 99] \\
I[k_0] &= [0,\ 0] \\
I[k_1] &= [0,\ 100] \\
I[k_2] &= [1,\ 100] \\
I[k_t] &= [0,\ 99] \\
I[k_t] &= [100,\ 100]
\end{aligned}
$$

(d)