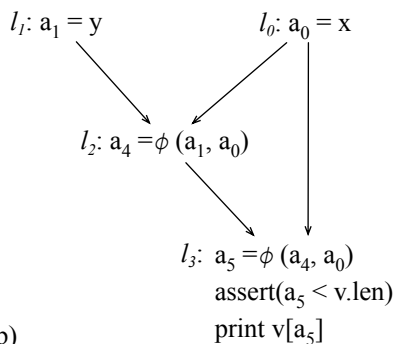
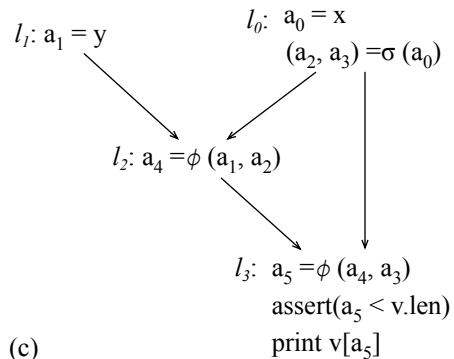


(a)



(b)



(c)

Backward flow:

$[a] < [v.len]$

$[x] \leq [a]$

$[y] \leq [a]$

Forward flow:

$[a] \geq [y]$

$[a] \geq [x]$

$[v.len] > [a]$

(d)

Backward flow:

$[a_5] < [v.len]$

$[a_4] \leq [a_5]$

$[a_0] \leq [a_5]$

$[a_0] \leq [a_4]$

$[a_1] \leq [a_4]$

$[x] \leq [a_0]$

$[y] \leq [a_4]$

Forward flow:

$[a_0] \geq [x]$

$[a_1] \geq [y]$

$[a_4] \geq \text{MAX}([a_1], [a_0])$

$[a_5] \geq \text{MAX}([a_0], [a_4])$

$[v.len] > [a_5]$

(e)

Backward flow:

$[a_5] < [v.len]$

$[a_4] \leq [a_5]$

$[a_3] \leq [a_5]$

$[a_2] \leq [a_4]$

$[a_1] \leq [a_4]$

$[a_0] \leq \text{MIN}([a_2], [a_3])$

$[x] \leq [a_0]$

$[y] \leq [a_4]$

Forward flow:

$[a_0] \geq [x]$

$[a_1] \geq [y]$

$[a_2] \geq [a_0]$

$[a_3] \geq [a_0]$

$[a_4] \geq \text{MAX}([a_1], [a_2])$

$[a_5] \geq \text{MAX}([a_3], [a_4])$

$[v.len] > [a_5]$

(f)