	Dataflow Problem 1
Domain	All expressions
Direction	Backward
	$IN[B] = f_B(OUT[B])$
	$OUT[B] = \bigcap_{s \in Succ(B)} IN[s]$
Transfer function	$f_B(x) = (x - kill_B) \cup gen_B$
Meet Operation	Intersection (∩)
Boundary Condition	$IN[EXIT] = \emptyset$
Initial interior points	$IN[B_i] = u$ (universal set)

			ITERAZIONE 1		ITERAZIONE 2	
	$kill_B$	$gen_B$	IN[B]	OUT[B]	IN[B]	OUT[B]
BB1	Ø	Ø	u	u	u	u
BB2	Ø	Ø	u	u	u	u
BB3	Ø	{(b-a)}	u	u	u	{(a-b)}
BB4	Ø	{(a-b)}	u	Ø	{(a-b)}	Ø
BB5	Ø	{(b-a)}	u	u	u	Ø
BB6	и	Ø	u	u	Ø	{(a-b)}
BB7	Ø	{(a-b)}	u	Ø	{(a-b)}	Ø
BB8	Ø	Ø	Ø	Ø	Ø	Ø

	ITERAZIONE 3		ITERAZIONE 4		ITERAZ	IONE 5
	IN[B]	OUT[B]	IN[B]	OUT[B]	IN[B]	OUT[B]
BB1	и	и	u	{(b-a)}	{(b-a)}	{(b-a)}
BB2	и	{(b-a)}	{(b-a)}	{(b-a)}	{(b-a)}	{(b-a)}
BB3	и	{(a-b)}	u	{(a-b)}	u	{(a-b)}
BB4	{(a-b)}	Ø	{(a-b)}	Ø	{(a-b)}	Ø
BB5	{(b-a)}	Ø	{(b-a)}	Ø	{(b-a)}	Ø
BB6	Ø	{(a-b)}	Ø	{(a-b)}	Ø	{(a-b)}
BB7	{(a-b)}	Ø	{(a-b)}	Ø	{(a-b)}	Ø
BB8	Ø	Ø	Ø	Ø	Ø	Ø

	Dataflow Problem 2
Domain	All subsets of nodes
Direction	Forward $OUT[B] = f_B(IN[B])$ $IN[B] = \bigcap_{p \in Pred(B)} OUT[p]$
Transfer function	$f_B(x) = x U\{B\}$
Meet Operation	Intersection (∩)
Boundary Condition	OUT[START] = {START}
Initial interior points	$OUT[B_i] = U$ (universal set)

	ITERAZIONE 1		ITERAZIONE 2		ITERAZIONE 3		ITERAZIONE 4	
	IN[X]	OUT[X]	IN[X]	OUT[X]	IN[X]	OUT[X]	IN[X]	OUT[X]
Α	Ø	{A}	Ø	{A}	Ø	{A}	Ø	{A}
В	{A}	u	{A}	{A,B}	{A}	{A,B}	{A}	{A,B}
С	{A}	u	{A}	{A,C}	{A}	{A,C}	{A}	{A,C}
D	u	u	{A,C}	u	{A,C}	{A,C,D}	{A,C}	{A,C,D}
Е	u	u	{A,C}	u	{A,C}	{A,C,E}	{A,C}	{A,C,E}
F	u	u	u	u	{A,C}	u	{A,C}	{A,C,F}
G	u	u	{A,B}	u	{A,B}	{A,B,G}	{A}	{A,B,G}

	ITERAZION	IE 5
	IN[X]	OUT[X]
Α	Ø	{A}
В	{A}	{A,B}
С	{A}	{A,C}
D	{A,C}	{A,C,D}
Е	{A,C}	{A,C,E}
F	{A,C}	{A,C,F}
G	{A}	{A,G}

	Dataflow Problem 3					
Domain	All possible pairs (x,c)					
Direction	Forward $OUT[B] = f_B(IN[B])$					
	$IN[B] = \bigcap_{p \in Pred(B)} OUT[p]$					
Transfer function	$f_B(IN[B]) = (IN[B] - \{(x,\_)\}) \cup gen_B$ Where: $\{(x,k)\}, if B: x = k \ (k \ is \ a \ constant)$					
	$gen_B = \begin{cases} \{(x, val(y))\}, & \text{if } B: x = y \text{ (y is a variable with constant value)} \\ \emptyset, & \text{if } B: x = y \text{ op } z \text{ and either } val(x) \text{ or } val(y) \text{ are not constants} \end{cases}$					
Meet Operation	Intersection (∩)					
Boundary Condition	OUT[START] = Ø					
Initial interior points	$OUT[B_i] = U$ (universal set)					

 $U = \{(a,4),(b,2),(k,2),(k,3),(k,4),(k,5),(x,5),(x,6),(x,8),(y,8)\}$ 

	ITERAZ	IONE 1	ITERAZIONE 2		ITERAZ	IONE 3
	IN[B]	OUT[B]	IN[B]	OUT[B]	IN[B]	OUT[B]
entry	Ø	Ø	Ø	Ø	Ø	Ø
k = 2	Ø	u	Ø	(k,2)	Ø	(k,2)
if	U	U	(k,2)	U	(k,2)	(k,2)
a = k + 2	U	U	U	U	(k,2)	U
x = 5	U	U	U	U-(x,6)-(x,8)	U	U-(x,6)-(x,8)
a = k * 2	U	U	U	U	(k,2)	U
x = 8	U	U	U	U-(x,5)-(x,6)	U	U-(x,5)-(x,6)
k = a	U	U	U-(x,_)	U-(k,2)-(k,3)-	U-(x,_)	(a,4),(b,2),(k,4),(y,8)
				(k,5)		
while	U	U	U-(k,_)	U	(a,4),(b,2),(k,4),(y,8)	U-(k,_)
b = 2	U	U	U	U	U-(k,_)	U
x = a + k	U	U	U	U-(x,_)	U	U-(x,_)
y = a * b	U	U	U-(x,_)	U	U-(x,_)	U-(x,_)
k++	U	U	U	U-(k,_)	U-(x,_)	U-(k,_)
print(a + x)	U	U	U-(k,_)	U	U-(k,_)	U
exit	U	U	U	U	U	U

	ITERAZ	ITERAZIONE 4		IONE 5	ITERAZ	IONE 6
	IN[B]	OUT[B]	IN[B]	OUT[B]	IN[B]	OUT[B]
entry	Ø	Ø	Ø	Ø	Ø	Ø
k = 2	Ø	(k,2)	Ø	(k,2)	Ø	(k,2)
if	(k,2)	(k,2)	(k,2)	(k,2)	(k,2)	(k,2)
a = k	(k,2)	(k,2),(a,4)	(k,2)	(k,2),(a,4)	(k,2)	(k,2),(a,4)
+ 2						
x = 5	(k,2),(a,4)	U-(x,6)-(x,8)	(k,2),(a,4)	(k,2),(a,4),(x,5)	(k,2),(a,4)	(k,2),(a,4),(x,5)
a = k	(k,2)	(k,2),(a,4)	(k,2)	(k,2),(a,4)	(k,2)	(k,2),(a,4)
* 2						
x = 8	(k,2),(a,4)	U-(x,5)-(x,6)	(k,2),(a,4)	(k,2),(a,4),(x,8)	(k,2),(a,4)	(k,2),(a,4),(x,8)
k = a	U-(x,_)	(a,4),(b,2),(k,4),(y	(a,4),(b,2),(y,8)	(a,4),(b,2),(y,8)	(a,4)	(a,4),(b,2),(y,8)
		,8)				
while	(a,4),(b,2),(y,8)	(a,4),(b,2),(k,4),(y	(a,4),(b,2),(y,8)	(a,4),(b,2),(y,8)	(a,4)	(a,4),(b,2),(y,8)
		,8)				
b = 2	(a,4),(b,2),(k,4),(y	U-(k,_)	(a,4),(b,2),(y,8)	(a,4),(b,2),(k,4),(y	(a,4),(b,2),(y,8)	(a,4),(b,2),(y,8)
	,8)			,8)		
x = a	U-(k,_)	U-(x,_)	(a,4),(b,2),(k,4),(y	(a,4),(b,2),(y,8)	(a,4),(b,2),(y,8)	(a,4),(b,2),(k,4),(y
+ k			,8)			,8)
y = a	U-(x,_)	U-(x,_)	(a,4),(b,2),(k,4),(y	U-(x,_)	(a,4),(b,2),(k,4),(y	(a,4),(b,2),(k,4),(y
* b			,8)		,8)	,8)
k++	U-(x,_)	(a,4),(b,2),(y,8)	U-(x,_)	(a,4),(b,2),(y,8)	(a,4),(b,2),(k,4),(y	(a,4),(b,2),(y,8)
					,8)	
print(	(a,4),(b,2),(k,4),(y	U-(k,_)	(a,4),(b,2),(y,8)	(a,4),(b,2),(k,4),(y	(a,4),(b,2),(y,8)	(a,4),(b,2),(k,4),(y
a + x)	,8)			,8)		,8)
exit	U-(k,_)	U	a,4),(b,2),(k,4),(y,	U-(k,_)	(a,4),(b,2),(y,8)	(a,4),(b,2),(y,8)
			8)			

	ITERAZIONE 7		ITERAZ	IONE 8	ITERAZ	IONE 9
	IN[B]	OUT[B]	IN[B]	OUT[B]	IN[B]	OUT[B]
entry	Ø	Ø	Ø	Ø	Ø	Ø
k = 2	Ø	(k,2)	Ø	(k,2)	Ø	(k,2)
if	(k,2)	(k,2)	(k,2)	(k,2)	(k,2)	(k,2)
a = k + 2	(k,2)	(k,2),(a,4)	(k,2)	(k,2),(a,4)	(k,2)	(k,2),(a,4)
x = 5	(k,2),(a,4)	(k,2),(a,4),(x,5)	(k,2),(a,4)	(k,2),(a,4),(x, 5)	(k,2),(a,4)	(k,2),(a,4),(x, 5)
a = k * 2	(k,2)	(k,2),(a,4)	(k,2)	(k,2),(a,4)	(k,2)	(k,2),(a,4)
x = 8	(k,2),(a,4)	(k,2),(a,4),(x,8)	(k,2),(a,4)	(k,2),(a,4),(x, 8)	(k,2),(a,4)	(k,2),(a,4),(x, 8)
k = a	(a,4)	(a,4)	(a,4)	(a,4)	(a,4)	(a,4)
while	(a,4)	(a,4)	(a,4)	(a,4)	(a,4)	(a,4)
b = 2	(a,4)	(a,4),(b,2),(y,8)	(a,4)	(a,4),(b,2)	(a,4)	(a,4),(b,2)
x = a + k	(a,4),(b,2),(y,8)	(a,4),(b,2),(y,8)	(a,4),(b,2)	(a,4),(b,2),(y, 8)	(a,4),(b,2)	(a,4),(b,2)
y = a *	(a,4),(b,2),(y,8)	(a,4),(b,2),(k,4),(y,	(a,4),(b,2),(y,	(a,4),(b,2),(y,	(a,4),(b,2)	(a,4),(b,2),(y,
b		8)	8)	8)		8)
k++	(a,4),(b,2),(k,4),(y,	(a,4),(b,2),(y,8)	(a,4),(b,2),(y,	(a,4),(b,2),(y,	(a,4),(b,2),(y,	(a,4),(b,2),(y,
	8)		8)	8)	8)	8)
print(	(a,4)	(a,4),(b,2),(y,8)	(a,4)	(a,4)	(a,4)	(a,4)

a + x)						
exit	(a,4),(b,2),(y,8)	(a,4),(b,2),(y,8)	(a,4)	(a,4),(b,2),(y,	(a,4)	(a,4)
				8)		