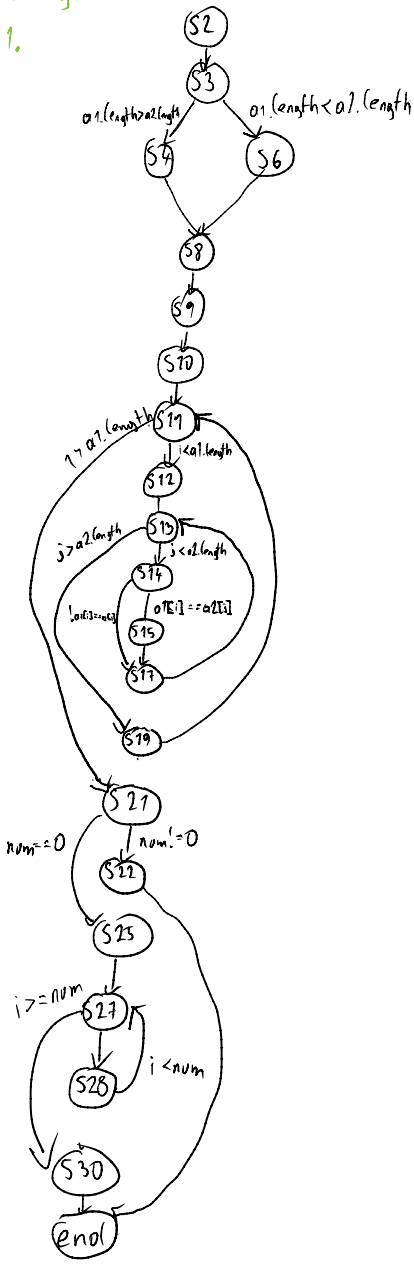
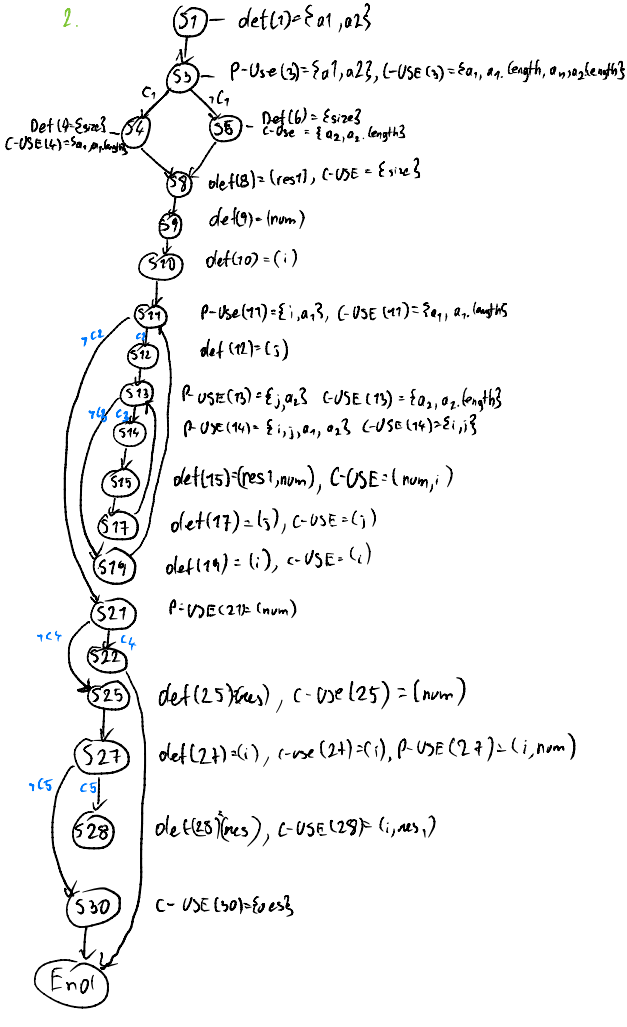
Übung1

1.

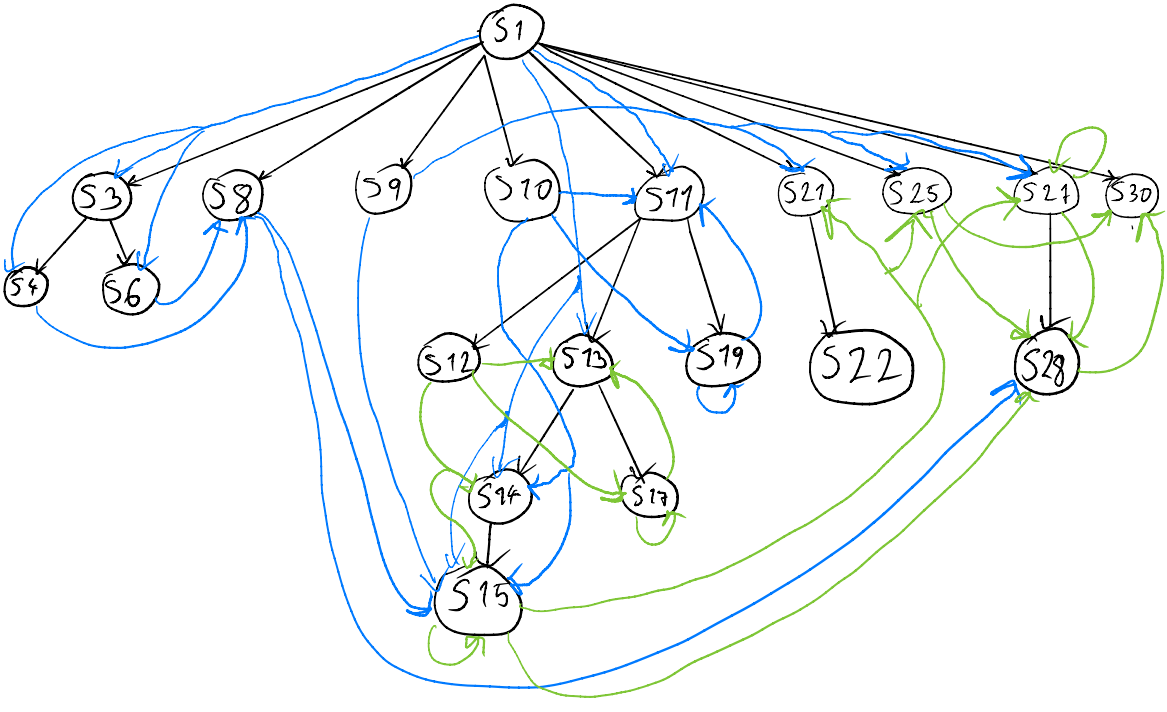

S2
S3
a1.length>a2.length
a1.length<a1.length
S4
S6
S8
S9
S10
S11
i>a1.length
i<a1.length
S12
S13
j>a2.length
j<a2.length
S14
a[i]!=a[j]
a[i]==a[j]
S15
S17
S19
S21
num==0
num!=0
S22
S25
i>=num
S27
i<num
S28
S30
end

2.

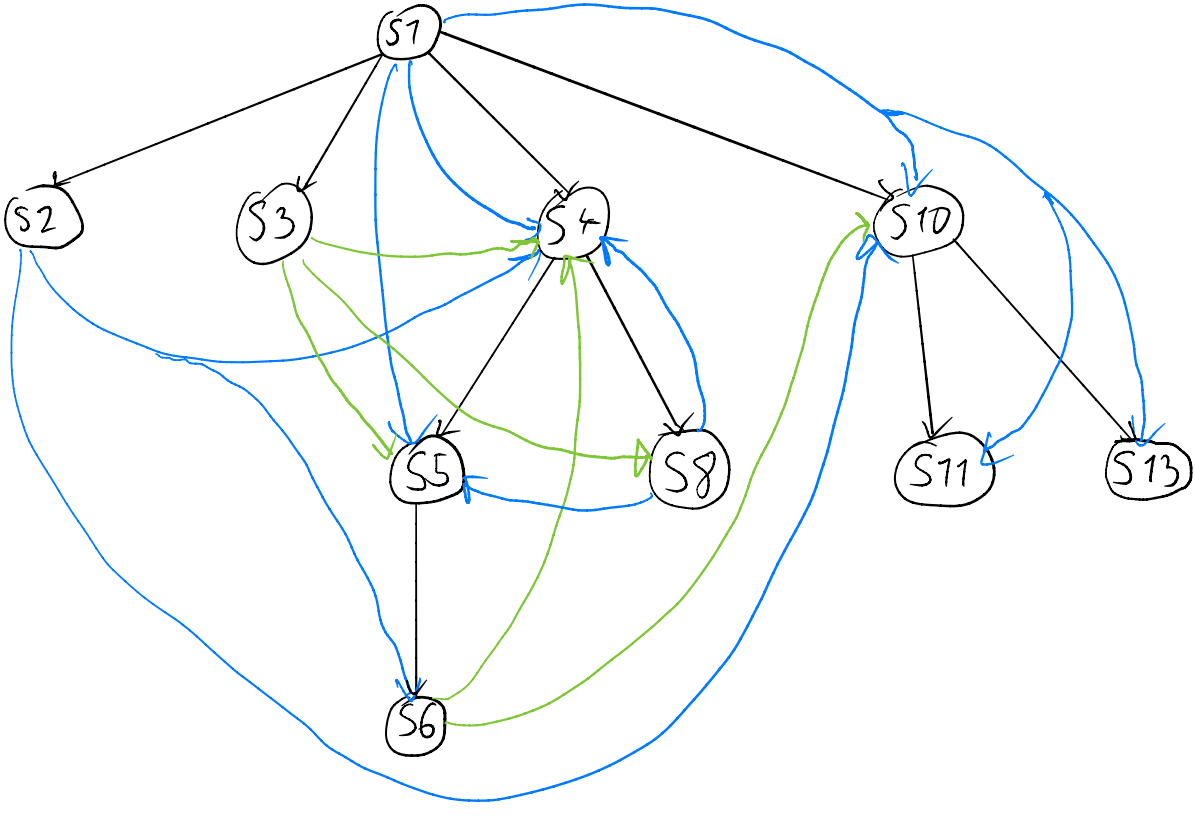

S1
def(1)={a1, a2}
S3
P-Use(3)={a1, a2}, C-USE(3)={a1, a1.length, a2, a2.length}
C1
¬C1
S4
Def(4)={size}
C-USE(4)={a1, a1.length}
S5
Def(6)={size}
C-use={a2, a2.length}
S8
def(8)=(rest), C-USE={size}
S9
def(9)=(num)
S10
def(10)=(i)
S11
P-Use(11)={i, a1}, C-USE(11)={a1, a1.length}
¬C2
C2
S12
def(12)=(j)
S13
P-USE(13)={j, a2} C-USE(13)={a2, a2.length}
¬C3
C3
S14
P-USE(14)={i, j, a1, a2} C-USE(14)={i, j}
S15
def(15)=(res1, num), C-USE=(num, i)
S17
def(17)=(j), C-USE=(j)
S19
def(19)=(i), C-USE=(i)
S21
P-USE(21)=(num)
¬C4
C4
S22
S25
def(25)(res), C-use(25)=(num)
S27
def(27)=(i), C-use(27)=(i), P-USE(27)=(i, num)
¬C5
C5
S28
def(28)(res), C-USE(28)=(i, res1)
S30
C-USE(30)={res}
End

Daten abh

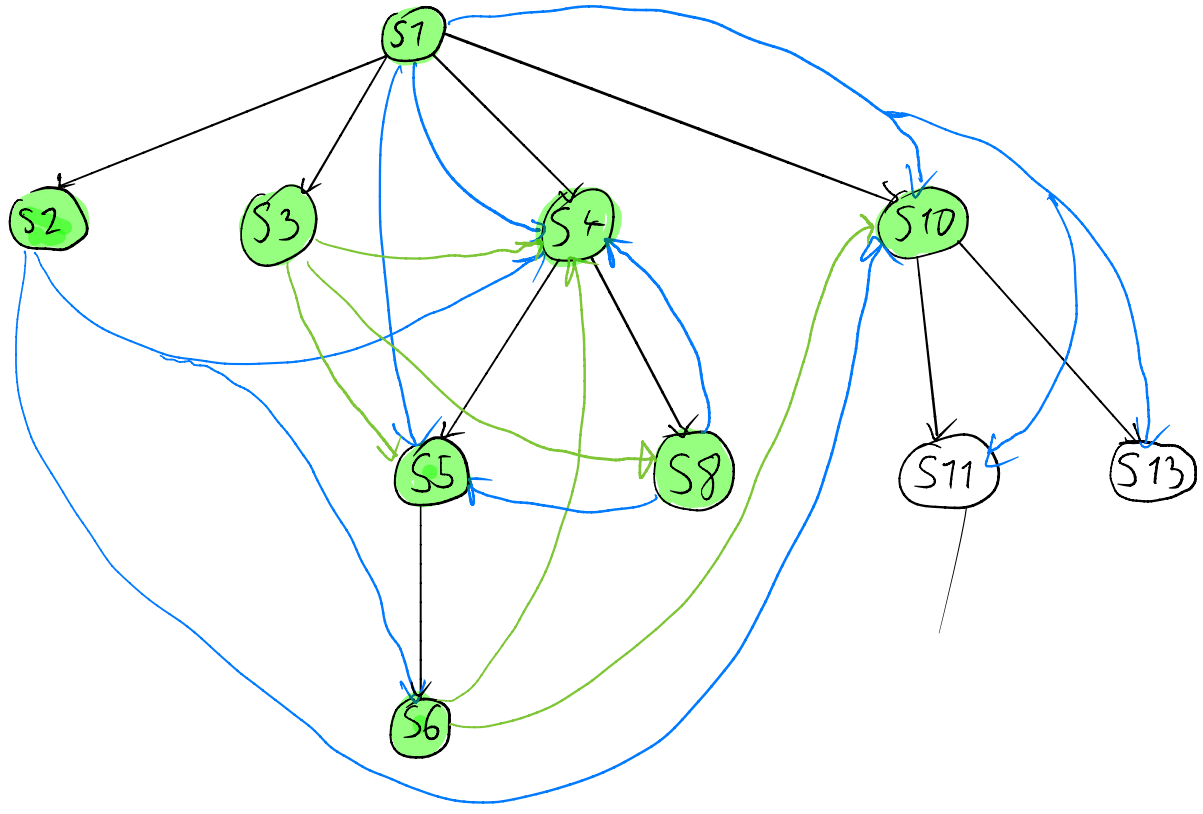
3.


S1
S3
S8
S9
S10
S11
S21
S25
S27
S30
S4
S6
S12
S13
S19
S22
S28
S14
S17
S15

4.

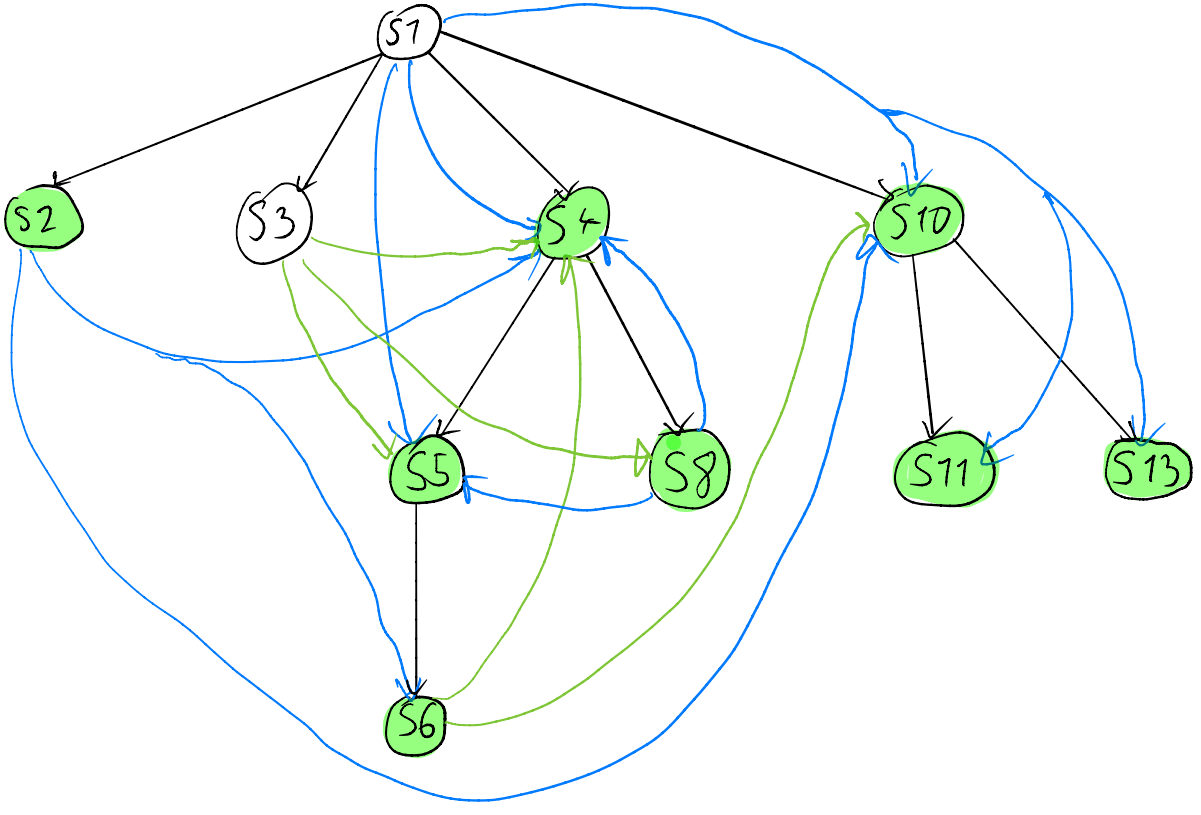


5.



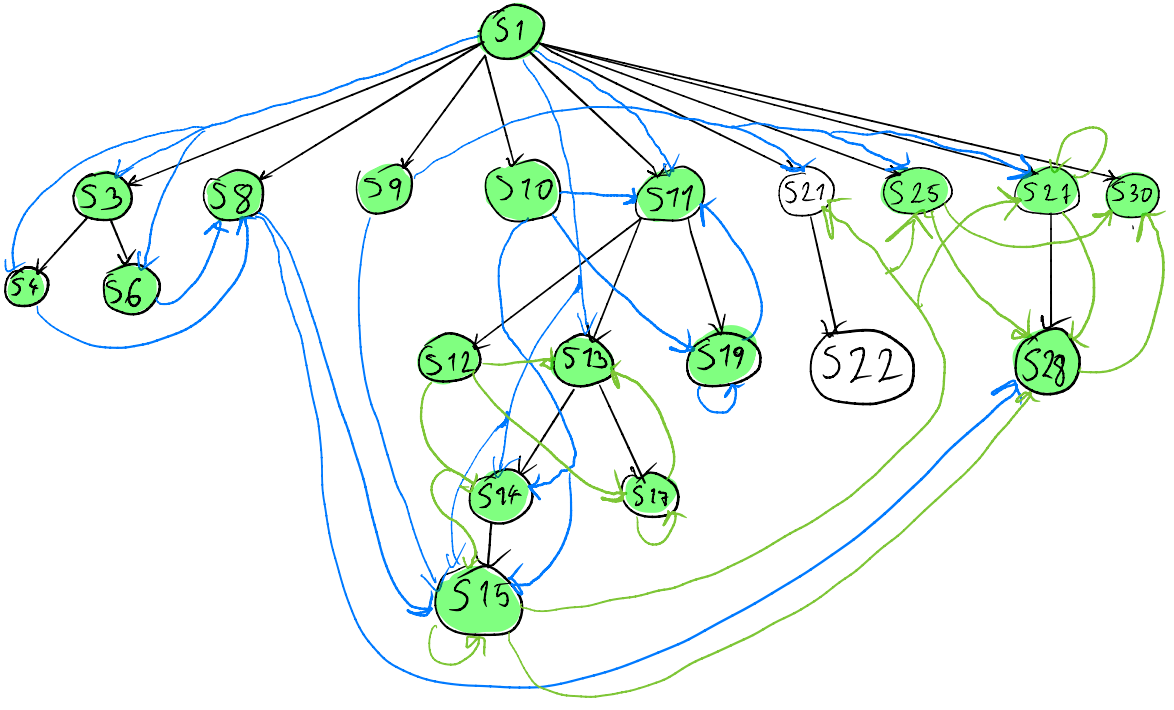
Slice(10, {isPrime}) = {S10, S1, S6, S2, S5, S3, S4, S8}

6)



Slice (2, {isPrime}) = {S2, S4, S5, S8, S6, S10, S11, S12}

7.


S1
S3
S8
S9
S10
S11
S21
S25
S27
S30
S4
S6
S12
S13
S19
S22
S28
S14
S17
S15

Re(ln) DEF(m) Relevant(m) Re(n) DEF(m)

8.

27 = Relevant(28) − DEF(27) = {enq} − {} = {enq}, {enq} ∩ {} = {} end

26: {enq} − {enq} = {}, {enq} ∩ {enq} = {enq}, {enq, x} einfügen

19: {enq, x} − {} = {} = {enq, x}, {enq, x} ∩ {} = {},

17: {enq, x} − {$event$} = {enq, x}, = {},

16: {enq, x} − {enq} = {x}, = {enq}, {x} ∪ {enq, mul} = {x, enq, mul} einf

15: {x, enq, mul} − {mul} = {enq, x}, {enq, x, mul} ∩ {mul} = {mul}, Relation ∪ {in} = {x, enq, in}

12: Rel(19) − Def(12) = {enq, x} − {$event$} = {enq, x}, = {} {enq, x}

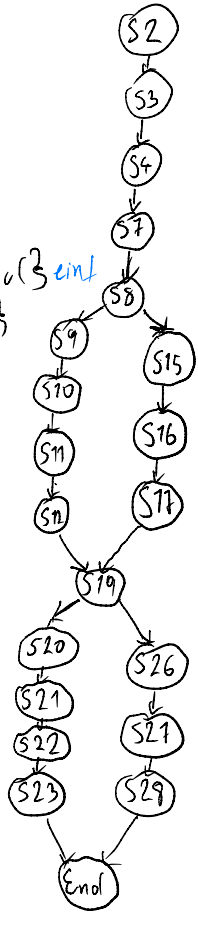
11: {enq, x} − {x} = {enq}, {x} ≠ {}, {enq} ∪ {mod} = {enq, mod} einf

10: {enq, mod} − {enq} = {mod}; {enq} ∈ {}, {mod} ∪ {enq, mod} = {enq, mod} einf

9: {enq, mod} − {mod} = {enq}, {mod} ≠ {}, {enq} ∪ {in} = {enq, in} einf

7: {x, enq, in} − {in} = {x, enq} = {in} ≠ {}, {x, enq} ∪ {} = {x, enq} einf

13: {x, enq} − {x} = {enq}; {x} ≠ {}, {enq} ∪ {} = {enq} einf



n	Anweisung	DEF(n)	USE(n)	CTRL	RELEVANT	SLICE (8,in)	SLICE(19,x)	
2	int erg = 0;	{erg}	{}		{}			
3	int x = 0;	{x}	{}		{erg}		{}	
4	int zehn = 10;	{zehn}	{}		{erg,x}		{x}	
5	int wert;	{}	{}		{erg,x}		{x}	
6	print(“>>”)	{}	{}		{erg,x}		{x}	
7	int in = In.readInt();	{in}	{}		{erg,x}	{}	{x}	
8	if (in > 100) {	{}	{in}		{x,erg,in}	{in}	{in,x}	
9	int mod = in % 5;	{mod}	{in}	{8}	{erg,in}		{in}	
10	erg = erg + mod;	{erg}	{erg,mod}	{8}	{erg,mod}		{mod}	
11	x = mod;	{x}	{mod}	{8}	{erg,mod}		{mod}	
12	wert = mod;	{wert}	{mod}	{8}	{erg,x}		{x}	
13	}							
14	else {							
15	int mul = in * 10;	{mul}	{in}	{8}	{x,erg,in}		{x}	
16	erg = erg + mul;	{erg}	{erg,mul}	{8}	{x,erg,mul}		{x}	
17	wert = mul / 5;	{wert}	{mul}	{8}	{erg,x}		{x}	
18	}							
19	if (x <= 0) {	{}	{x}		{erg,x}		{x}	
20	x = zehn;	{x}	{zehn}	{19}				
21	erg = erg / x;	{erg}	{erg,x}	{19}				
22	print(wert)	{}	{wert}	{19}				
23	print(erg)	{}	{erg}	{19}				
24	}							
25	else {							
26	erg = erg / x;	{erg}	{erg,x}	{19}	{erg,x}			
27	print(wert)	{}	{wert}	{19}	{erg}			
28	print(erg)	{}	{erg}	{19}	{erg}			
29	}							

Slice{28,erg}= (28,26,16,15,11,10,9,7,3,2)

Slice{8,in}=(8,7)

Slice{19,x}=(19,11,9,7,3)

Slice(28,erg) or Slice(8,in) or Slice(19,x) = {28,26,19,16,15,11,10,9,8,7,3,2}

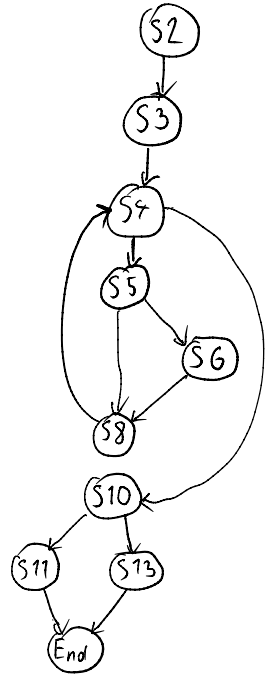
9) Relevant (13, n)

13 {n}

10 {n} - {} = {n}, {n} n {} = {}

8 {n} - {i} = {n}, {n} n {i} = {}

6



n	Anweisung	DEF(n)	USE(n)	Control(n)	Rlv(13,n)	Rlv(10,isPrime,n)	Rlv(5,n,i)	Rlv(4,i,n,isPrime)
1	pIP(int n) {	{n}	{}		{}	{}	{}	{}
2	boolean isPrime = true;	{isPrime}	{}		{n}	{n}	{n}	{n}
3	int i = 2;	{i}	{}		{n}	{isPrime,n}	{n}	{n,isPrime}
4	while (i < n && isPrime) {	{}	{i,n,isPrime}		{n}	{isPrime,n}	{n,i}	{i,n,isPrime}
5	if (n % i == 0) {	{}	{n,i}	{4}	{n}	{n}	{n,i}	{i,n}
6	isPrime = false;	{isPrime}	{}	{5}	{n}	{n}	{n,i}	{i,n}
7	}							
8	i++;	{i}	{i}	{4}	{n}	{isPrime,n}	{n,i}	{i,n,isPrime}
9	}							
10	if (isPrime && n > 1) {	{}	{isPrime,n}		{n}	{isPrime,n}		
11	print(n)	{}	{n}	{10}				
12	} else {							
13	print(n)	{}	{n}	{10}	{n}			
14	}							
15	}							

Slice(13,n) = {13,1}

Slice(10,isPrime,n) = {10,6,2,1}

Slice(5,n,i) = {5,8,3,1}

Slice(4,n,i,isPrime) = {4,8,6,3,2,1}

Slice(sum) = {13,10,8,6,5,4,3,2,1}