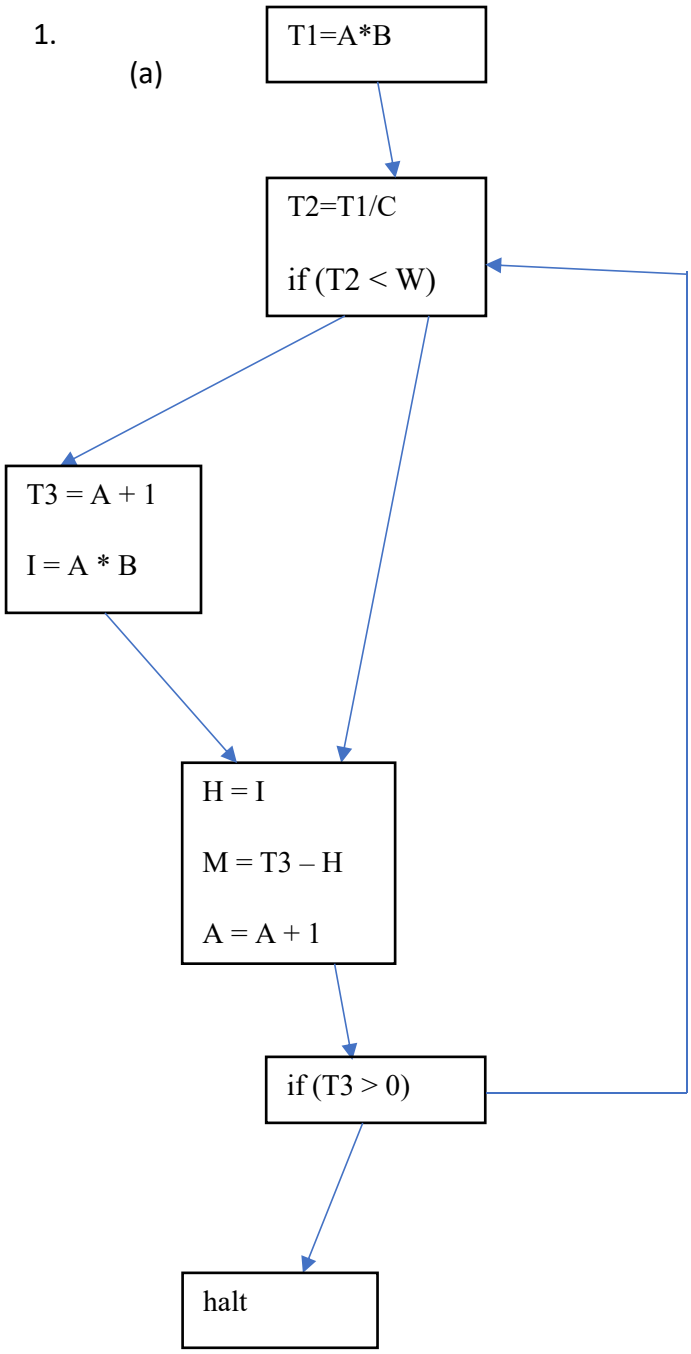
`

1.

(a)



(b):

Compute the def, Nkill and avail set for each block:

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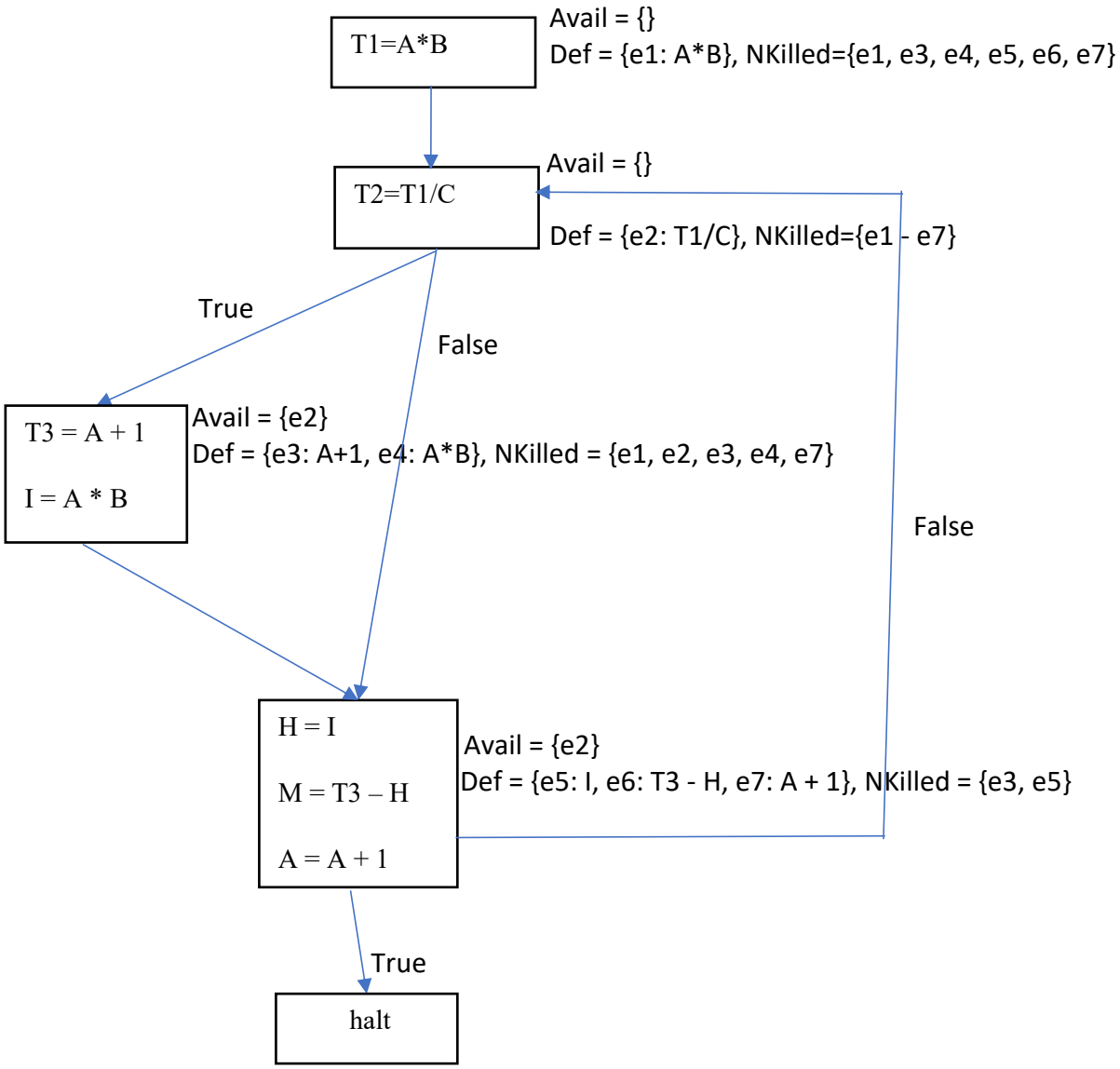

After calculating the avail set for each basic block, we cannot eliminating any duplicated expressions since the avail set of the blocks, if not empty, only contains e2.

2.

(a):

	0 (enter)	1	2	3	4	5	6	7 (exit)
Dom	0	0, 1	0, 1, 2	0, 1, 2, 3	0, 1, 2, 4	0, 1, 2, 4, 5	0, 1, 2, 4, 6	0, 1, 2, 4, 7
sDom		0	0, 1	0, 1, 2	0, 1, 2	0, 1, 2, 4	0, 1, 2, 4	0, 1,2, 4
iDom	0	0	1	2	2.,,	4	4	4

`

(b):

DF(B2) = {B2}, since B2 strictly dominates every one of its children nodes
DF(B3) = {B2}, since B3 dominates B2, which is a predecessor of B3, and doesn't strictly dominates B3.
DF(B6) = {exit}, since B6 dominates B6, which is a predecessor of exit, and doesn't stricly dominates exit