

$$9.2a) (A \leftrightarrow (B \wedge C)) \equiv$$

$$(\neg A \vee (B \wedge C)) \wedge (\neg(B \wedge C) \vee A) \equiv$$

$$(\neg A \vee B) \wedge (\neg A \vee C) \wedge (\neg B \vee \neg C \vee A)$$

9.3

A	B	C	F
0	0	0	1
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1

$$D_F: (\neg A \wedge \neg B \wedge \neg C) \vee (\neg A \wedge \neg B \wedge C) \vee (A \wedge \neg B \wedge \neg C)$$

$$K_F: (\neg A \vee B \vee \neg C) \wedge (\neg A \vee B \vee C) \wedge (A \vee \neg B \vee C) \wedge$$

$$(A \vee B \vee \neg C) \wedge (A \vee B \vee C)$$

b) KV: 
$$\frac{A}{B \mid \frac{\quad}{C}}$$

$$DNF: (\neg B \wedge \neg C) \vee (\neg A \wedge \neg B)$$

$$KNF: \neg B \wedge (\neg A \vee \neg C)$$

$$F: \neg((\neg A \rightarrow B) \wedge ((A \wedge \neg C) \rightarrow B)) \equiv$$

$$\neg((A \vee B) \wedge (\neg(A \wedge \neg C) \vee B)) \equiv$$

$$\neg((A \vee B) \wedge (\neg A \vee C \vee B)) \equiv$$

$$\neg(A \vee B) \vee \neg(\neg A \vee C \vee B) \equiv$$

$$\begin{aligned}
 & (\neg A \wedge B) \vee (A \wedge \neg C \wedge \neg B) \equiv \\
 & \neg B \wedge ((A \wedge C) \vee (\neg A)) \equiv \\
 & \neg B \wedge ((A \vee \neg A) \wedge (\neg A \vee C)) \equiv \\
 & \neg B \wedge (\neg A \vee C)
 \end{aligned}$$

d)  $\{\neg B\}$      $\{\neg A, \neg C\}$

B: false / OR: true

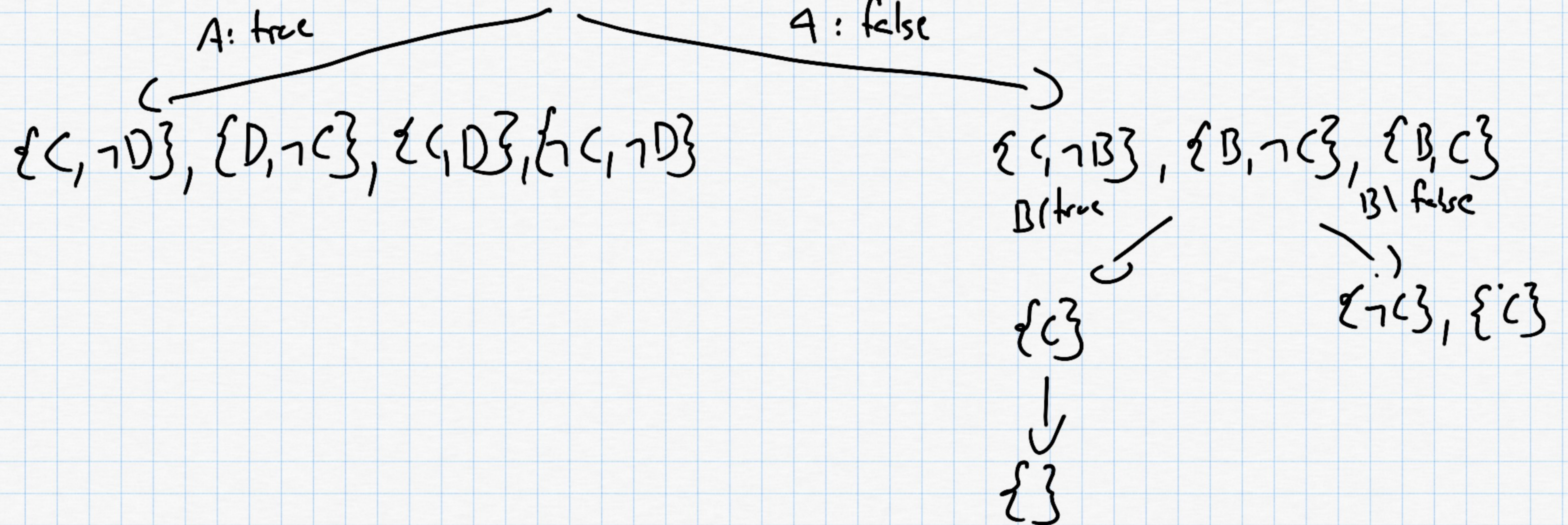
$\{\neg A, \neg C\}$

/ AND: true

$\{\}$

□

9.4)  $\{C, \neg A, \neg D\}$     $\{D, \neg A, \neg C\}$     $\{A, C, \neg B\}$     $\{C, D, \neg A\}$     $\{\neg A, \neg C, \neg D\}$     $\{A, B, \neg C\}$     $\{A, B, C\}$



9.5 a)

