

6.5
set-up

- | | |
|-------------------------------------|-------------------|
| 1. $A \wedge (B \vee C)$ | |
| 2. A | ✓ \wedge Elim 1 |
| 3. $B \vee C$ | ✓ \wedge Elim 1 |
| 4. $\neg B$ | |
| 5. $(A \wedge B) \vee (A \wedge C)$ | Rule? |
| 6. $\neg C$ | |
| 7. $(A \wedge B) \vee (A \wedge C)$ | Rule? |
| 8. $(A \wedge B) \vee (A \wedge C)$ | Rule? |

Goals

▶ $(A \wedge B) \vee (A \wedge C)$

"tri-lemma"
problem

1. $(A \wedge B) \vee C \vee D$

Goals

▶ $B \vee C \vee D \vee E$

set-up

1. $(A \wedge B) \vee C \vee D$

2. $\neg A \wedge B$

3. $B \vee C \vee D \vee E$

Rule?

4. $\neg C$

5. $B \vee C \vee D \vee E$

Rule?

6. $\neg D$

7. $B \vee C \vee D \vee E$

Rule?

8. $B \vee C \vee D \vee E$

Rule?

Goals

▶ $B \vee C \vee D \vee E$

completed
derivation

1. $(A \wedge B) \vee C \vee D$

2. $\neg A \wedge B$

3. B

✓ \wedge Elim 2

4. $B \vee C \vee D \vee E$

✓ \vee Intro 3

5. $\neg C$

6. $B \vee C \vee D \vee E$

✓ \vee Intro 5

7. $\neg D$

8. $B \vee C \vee D \vee E$

✓ \vee Intro 7

9. $B \vee C \vee D \vee E$

✓ \vee Elim 1,2,4,5,6,7-8

Goals

▶ $B \vee C \vee D \vee E$

✓ 9