

Derivation of  $((A \supset B) \supset B) \supset ((B \supset A) \supset A)^t$ :

$$\frac{\frac{\frac{\text{axiom for } A}{A^f, A^p, A^t, B^p, B^t, (B \supset A)^f, (B \supset A)^p} \quad \frac{\text{axiom for } A}{A^f, A^p, A^t, B^p, B^t, (B \supset A)^f}}{A^f, A^p, B^p, B^t, ((B \supset A) \supset A)^t} \quad \frac{\frac{\text{axiom for } A}{A^f, A^p, A^t, B^f, B^p, B^t, ((B \supset A) \supset A)^t} \quad \frac{\text{axio}}{A^f, A^p, A^t, B^f, B^t}}{A^f, A^p, B^t, (A \supset B)^p, ((B \supset A) \supset A)^t} \quad \frac{\text{axio}}{A^f, A^p, B^t, ((A \supset B) \supset B)^p, ((B \supset A) \supset A)^t}$$

Derivation of  $((A \supset B) \supset B) \supset ((B \supset A) \supset A)^t$ :

$$\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{7}{6} \frac{8}{9}}{5} \quad \frac{\frac{12}{11} \frac{13}{14}}{10}}{4}} \quad \frac{\frac{7}{6} \frac{8}{17}}{15}}{3}} \quad \frac{\frac{\frac{\frac{23}{22} \frac{24}{25}}{21} \quad \frac{\frac{26}{27} \frac{30}{29} \frac{31}{25}}{28}}{20}}{2}} \quad \frac{\frac{12}{11} \frac{13}{34}}{33}}{19} \quad \frac{\frac{\frac{7}{6} \frac{8}{39} \frac{40}{41}}{38} \quad \frac{9}{42} \frac{43}{37}}{37}}{1} \quad \frac{\frac{7}{6} \frac{8}{6}}{45} \frac{7}{6}}{36}}{4}}{1}$$

Table of sequents:

- 1:  $((A \supset B) \supset B) \supset ((B \supset A) \supset A)^t$
- 2:  $((A \supset B) \supset B)^f, ((A \supset B) \supset B)^p, ((B \supset A) \supset A)^t$
- 3:  $(A \supset B)^t, ((A \supset B) \supset B)^p, ((B \supset A) \supset A)^t$
- 4:  $A^f, A^p, B^t, ((A \supset B) \supset B)^p, ((B \supset A) \supset A)^t$
- 5:  $A^f, A^p, B^p, B^t, (A \supset B)^p, ((B \supset A) \supset A)^t$
- 6:  $A^f, A^p, B^p, B^t, ((B \supset A) \supset A)^t$
- 7:  $A^f, A^p, A^t, B^p, B^t, (B \supset A)^f, (B \supset A)^p$
- 8:  $A^f, A^p, A^t, B^p, B^t, (B \supset A)^f$
- 9:  $A^f, A^p, A^t, B^f, B^p, B^t, ((B \supset A) \supset A)^t$
- 10:  $A^f, A^p, B^f, B^t, (A \supset B)^t, ((B \supset A) \supset A)^t$
- 11:  $A^f, A^p, B^f, B^t, ((B \supset A) \supset A)^t$
- 12:  $A^f, A^p, A^t, B^f, B^t, (B \supset A)^f, (B \supset A)^p$
- 13:  $A^f, A^p, A^t, B^f, B^t, (B \supset A)^f$
- 14:  $A^f, A^p, B^f, B^p, B^t, ((B \supset A) \supset A)^t$
- 15:  $A^f, B^p, B^t, ((A \supset B) \supset B)^p, ((B \supset A) \supset A)^t$
- 16:  $A^f, B^p, B^t, (A \supset B)^p, ((B \supset A) \supset A)^t$
- 17:  $A^f, A^t, B^f, B^p, B^t, ((B \supset A) \supset A)^t$
- 18:  $A^f, B^f, B^p, B^t, (A \supset B)^t, ((B \supset A) \supset A)^t$
- 19:  $B^f, ((A \supset B) \supset B)^p, ((B \supset A) \supset A)^t$
- 20:  $B^f, B^p, (A \supset B)^p, ((B \supset A) \supset A)^t$
- 21:  $A^p, B^f, B^p, ((B \supset A) \supset A)^t$
- 22:  $A^p, A^t, B^f, B^p, (B \supset A)^f, (B \supset A)^p$
- 23:  $A^p, A^t, B^f, B^p, B^t, (B \supset A)^p$
- 24:  $A^f, A^p, A^t, B^f, B^p, (B \supset A)^p$
- 25:  $A^p, A^t, B^f, B^p, (B \supset A)^f$
- 26:  $A^p, A^t, B^f, B^p, B^t$
- 27:  $A^f, A^p, A^t, B^f, B^p$
- 28:  $A^t, B^f, B^p, ((B \supset A) \supset A)^t$
- 29:  $A^t, B^f, B^p, (B \supset A)^f, (B \supset A)^p$
- 30:  $A^t, B^f, B^p, B^t, (B \supset A)^p$
- 31:  $A^f, A^t, B^f, B^p, (B \supset A)^p$
- 32:  $A^f, A^t, B^f, B^p, B^t$
- 33:  $B^f, (A \supset B)^t, ((B \supset A) \supset A)^t$
- 34:  $A^f, B^f, B^p, B^t, ((B \supset A) \supset A)^t$
- 35:  $((A \supset B) \supset B)^f, ((B \supset A) \supset A)^p, ((B \supset A) \supset A)^t$
- 36:  $(A \supset B)^t, ((B \supset A) \supset A)^p, ((B \supset A) \supset A)^t$
- 37:  $A^f, A^p, B^t, ((B \supset A) \supset A)^p, ((B \supset A) \supset A)^t$
- 38:  $A^f, A^p, B^t, (B \supset A)^p, ((B \supset A) \supset A)^t$
- 39:  $A^f, A^p, B^t, ((B \supset A) \supset A)^t$
- 40:  $A^f, A^p, A^t, B^t, (B \supset A)^f, (B \supset A)^p$
- 41:  $A^f, A^p, A^t, B^t, (B \supset A)^f$
- 42:  $A^f, A^p, B^t, (B \supset A)^t, ((B \supset A) \supset A)^t$
- 43:  $A^f, A^p, A^t, B^f, B^t, ((B \supset A) \supset A)^t$
- 44:  $A^f, B^p, B^t, ((B \supset A) \supset A)^p, ((B \supset A) \supset A)^t$
- 45:  $A^f, A^p, B^p, B^t, (B \supset A)^p, ((B \supset A) \supset A)^t$
- 46:  $A^f, B^p, B^t, (B \supset A)^t, ((B \supset A) \supset A)^t$
- 47:  $B^f, ((B \supset A) \supset A)^p, ((B \supset A) \supset A)^t$
- 48:  $A^p, B^f, (B \supset A)^p, ((B \supset A) \supset A)^t$
- 49:  $A^f, B^f, (B \supset A)^t, ((B \supset A) \supset A)^t$
- 50:  $A^f, A^t, B^f, B^p, ((B \supset A) \supset A)^t$
- 51:  $A^f, A^t, B^f, B^p, (B \supset A)^f, (B \supset A)^p$
- 52:  $A^f, A^t, B^f, B^p, B^t, (B \supset A)^p$
- 53:  $A^f, A^p, A^t, B^f, B^p, (B \supset A)^f$
- 54:  $A^f, A^p, A^t, B^f, ((B \supset A) \supset A)^t$