

## Proof Tree Nesting Depth Test

### Test 1 : Simple ( depth 1 )

$$\frac{\frac{\lceil p \neg[1] \quad \neg q \rceil}{p \Rightarrow q} \text{ [axiom]}}{\lceil p \Rightarrow q \rceil} \text{ [\Rightarrow -intro}^{[1]}]$$

### Test 2 : Moderate ( depth 2 )

$$\frac{\frac{\lceil p \neg[1] \quad \frac{\frac{\lceil q \neg[2] \quad \neg r \rceil}{q \Rightarrow r} \text{ [axiom]}}{q \Rightarrow r} \text{ [\Rightarrow -intro}^{[2]}]}{p \Rightarrow (q \Rightarrow r)} \text{ [\Rightarrow -intro}^{[1]}]$$

### Test 3 : Deep ( depth 3 )

$$\frac{\frac{\lceil p \neg[1] \quad \frac{\frac{\frac{\lceil q \neg[2] \quad \frac{\frac{\lceil r \neg[3] \quad \neg s \rceil}{r \Rightarrow s} \text{ [axiom]}}{r \Rightarrow s} \text{ [\Rightarrow -intro}^{[3]}]}{q \Rightarrow (r \Rightarrow s)} \text{ [\Rightarrow -intro}^{[2]}]}{p \Rightarrow (q \Rightarrow (r \Rightarrow s))} \text{ [\Rightarrow -intro}^{[1]}]$$

### Test 4 : Very Deep ( depth 4 )

$$\frac{\frac{\lceil p \neg[1] \quad \frac{\frac{\frac{\frac{\frac{\lceil q \neg[2] \quad \frac{\frac{\frac{\frac{\lceil r \neg[3] \quad \frac{\frac{\lceil s \neg[4] \quad \neg t \rceil}{s \Rightarrow t} \text{ [axiom]}}{s \Rightarrow t} \text{ [\Rightarrow -intro}^{[4]}]}{r \Rightarrow (s \Rightarrow t)} \text{ [\Rightarrow -intro}^{[3]}]}{q \Rightarrow (r \Rightarrow (s \Rightarrow t))} \text{ [\Rightarrow -intro}^{[2]}]}{p \Rightarrow (q \Rightarrow (r \Rightarrow (s \Rightarrow t)))} \text{ [\Rightarrow -intro}^{[1]}]$$

### Test 5 : Horizontal siblings ( depth 2 )

$$\frac{\frac{\lceil p \wedge q \neg[1] \quad \frac{\frac{\lceil p \neg[1] \quad \lceil q \neg[1] \rceil}{p \wedge q} \text{ [\wedge elim]}}{(p \wedge q) \Rightarrow r} \text{ [\Rightarrow -intro}^{[1]}]$$