

Step: 1: Assume  $(P \wedge Q) \rightarrow R$  (Assumption)

Step 2: Assume  $P$  (Assumption)

Step 3: Assume  $Q$  (Assumption)

Step: 4: <sup>From step 2,</sup> Using Conjunction Elimination (∧E), we have  $P$

Step: 5: <sup>From step 3,</sup> Using Conjunction Elimination (∧E), we have  $Q$

Step: 6: From step 1 & 4, using conditional elimination ( $\rightarrow$ E), we have  $R$ .

Step: 7: End of subproof, for assumption  $Q$ .

Step: 8: From step 3 to 7,  $Q \rightarrow R$  using Conditional Implication Introduction

Step: 9: From step: 2 to 8,  $P \rightarrow (Q \rightarrow R)$   
Using Conditional Introduction ( $\rightarrow$ I)

Step: 10 - From step 1 & 9, using Conditional elimination ( $\rightarrow$ E), we have  $R$ .

Step: 11: End of subproof assumption  $P$ .

Step: 12: ~~From~~ <sup>From</sup> step 2 to 11, we have  $P \rightarrow R$   
Conditional Introduction ( $\rightarrow$ I)