

Name _____ Student Number _____

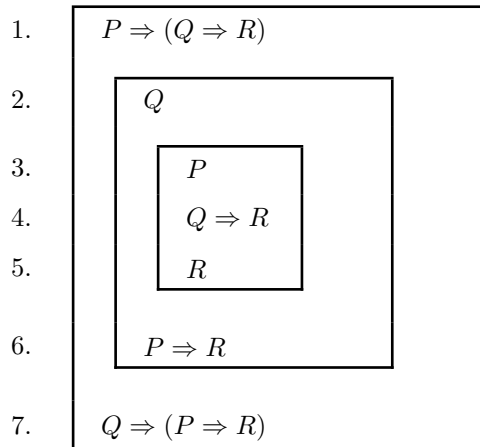
Homework #3, CSCI 480, Winter 2015

Give justifications for each line in the following proofs. Include line numbers wherever appropriate.

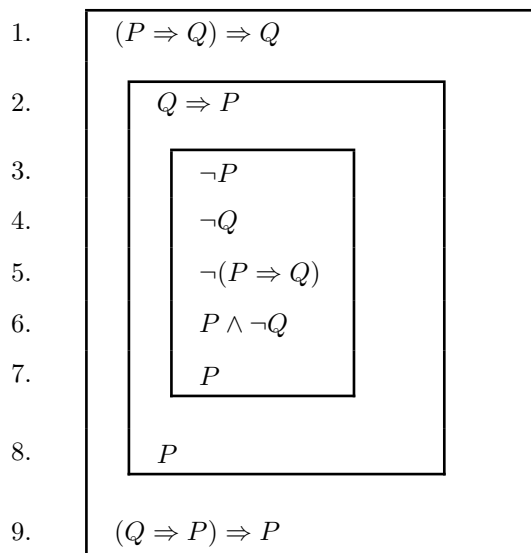
- | | | |
|----|---|-------|
| 1. | $P \Rightarrow (P \Rightarrow Q)$ | <hr/> |
| 2. | P | <hr/> |
| 3. | $P \Rightarrow Q$ | <hr/> |
| 4. | Q | <hr/> |
| 5. | $P \Rightarrow Q$ | <hr/> |
| 6. | $(P \Rightarrow (P \Rightarrow Q)) \Rightarrow (P \Rightarrow Q)$ | <hr/> |

- | | | |
|----|---|-------|
| 1. | $P \Rightarrow Q$ | <hr/> |
| 2. | $P \wedge R$ | <hr/> |
| 3. | P | <hr/> |
| 4. | R | <hr/> |
| 5. | Q | <hr/> |
| 6. | $Q \wedge R$ | <hr/> |
| 7. | $(P \wedge R) \Rightarrow (Q \wedge R)$ | <hr/> |
| 8. | $(P \Rightarrow Q) \Rightarrow ((P \wedge R) \Rightarrow (Q \wedge R))$ | <hr/> |

- | | | |
|-----|--|-------|
| 1. | $(P \Rightarrow R) \wedge (Q \Rightarrow S)$ | <hr/> |
| 2. | $P \Rightarrow R$ | <hr/> |
| 3. | $Q \Rightarrow S$ | <hr/> |
| 4. | $P \wedge Q$ | <hr/> |
| 5. | P | <hr/> |
| 6. | Q | <hr/> |
| 7. | R | <hr/> |
| 8. | S | <hr/> |
| 9. | $R \wedge S$ | <hr/> |
| 10. | $(P \wedge Q) \Rightarrow (R \wedge S)$ | <hr/> |
| 11. | $((P \Rightarrow R) \wedge (Q \Rightarrow S)) \Rightarrow ((P \wedge Q) \Rightarrow (R \wedge S))$ | <hr/> |



8. $(P \Rightarrow (Q \Rightarrow R)) \Rightarrow (Q \Rightarrow (P \Rightarrow R))$



10. $((P \Rightarrow Q) \Rightarrow Q) \Rightarrow ((Q \Rightarrow P) \Rightarrow P)$

Due date: Monday, February 2, at the start of class.