Main Expression: ¬(p→q)⊢p∧¬q

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Line | Expression | Rule | First Segment | Second Segment | Third Segment |
| 1 | ¬(p→q) | Data |  |  |  |
| ┌--------------------------------------------------------------------------------------------------------------┐ | | | | | |
| 2 | ¬p | Assumption |  |  |  |
| ┌------------------------------------------------------------------------------------------------------┐ | | | | | |
| 3 | p | Assumption |  |  |  |
| 4 | ⊥ | ¬e | 2 | 3 |  |
| 5 | q | ⊥e | 4 |  |  |
| └------------------------------------------------------------------------------------------------------┘ | | | | | |
| 6 | p→q | →i | 3-5 |  |  |
| └--------------------------------------------------------------------------------------------------------------┘ | | | | | |
| 7 | ¬p→(p→q) | →i | 2-6 |  |  |
| ┌--------------------------------------------------------------------------------------------------------------┐ | | | | | |
| 8 | q | Assumption |  |  |  |
| ┌------------------------------------------------------------------------------------------------------┐ | | | | | |
| 9 | p | Assumption |  |  |  |
| 10 | q | Copy | 8 |  |  |
| └------------------------------------------------------------------------------------------------------┘ | | | | | |
| 11 | p→q | →i | 9-10 |  |  |
| └--------------------------------------------------------------------------------------------------------------┘ | | | | | |
| 12 | q→(p→q) | →i | 8-11 |  |  |
| 13 | ¬¬p | MT | 1 | 7 |  |
| 14 | ¬q | MT | 1 | 12 |  |
| 15 | p | ¬¬e | 14 |  |  |
| 16 | p∧¬q | ∧i | 13 | 14 |  |