**Logic Tool Results**

Logical Expression: ⊢(q→r)→((¬q→¬p)→(p→r))

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Line | Expression | Rule | First Segment | Second Segment | Third Segment |
| ┌--------------------------------------------------------------------------------------------------------------┐ | | | | | |
| 1 | q→r | Assumption |  |  |  |
| ┌------------------------------------------------------------------------------------------------------┐ | | | | | |
| 2 | ¬q→¬p | Assumption |  |  |  |
| ┌----------------------------------------------------------------------------------------------┐ | | | | | |
| 3 | p | Assumption |  |  |  |
| 4 | ¬¬p | ¬¬i | 3 |  |  |
| 5 | ¬¬q | MT | 2 | 4 |  |
| 6 | q | ¬¬e | 5 |  |  |
| 7 | r | MP | 1 | 6 |  |
| └----------------------------------------------------------------------------------------------┘ | | | | | |
| 8 | p→r | →i | 3-7 |  |  |
| └------------------------------------------------------------------------------------------------------┘ | | | | | |
| 9 | (¬q→¬p)→(p→r) | →i | 2-8 |  |  |
| └--------------------------------------------------------------------------------------------------------------┘ | | | | | |
| 10 | (q→r)→((¬q→¬p)→(p→r)) | →i | 1-9 |  |  |