**Logic Tool Results**

Main Expression:  
a=b,∀x∃y(x=f(y))⊢∃y((a=f(y))^(b=f(y)))

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Line | Expression | Rule | First Segment | Second Segment | Third Segment |
| 1 | a=b | Data |  |  |  |
| 2 | ∀x∃y(x=f(y)) | Data |  |  |  |
| 3 | ∃y(a=f(y)) | ∀x e | 2 |  |  |
| 4 | ∃xΦ⊢∃x(Φ∧Φ) | Proven i |  |  |  |
| 5 | ∃y((a=f(y))^(a=f(y))) | Proven e | 4 | 3 |  |
| 6 | ∃y((a=f(y))^(b=f(y))) | =e | 1 | 5 |  |