

Logic for AI - Written Final Test of January 7, 2026 CORRECTION

1

1. $\neg M(x, t)$
2. $\neg C(x, y, z) \vee M(x, z)$
3. $\neg M(x, z) \vee \neg C(w, z, y) \vee M(x, y)$
4. $C(x, y, \ell(x, y))$
5. $\neg M(b, \ell(a, \ell(b, \ell(c, t))))$
6. $\neg M(b, z) \vee \neg C(w, z, \ell(a, \ell(b, \ell(c, t))))$
7. $\neg M(b, \ell(b, \ell(c, t)))$
8. $\neg C(b, y, \ell(b, \ell(c, t)))$
9. $\neg$

Hypotheses

Negated Thesis

- 3/5 $mg_u = \{b/x_3, \ell(a, \ell(b, \ell(c, t)))/y_3\}$
- 4/6 $mg_u = \{a/x_4, \ell(b, \ell(c, t)))/y_4 = z_6, w_6 = x_4\}$
- 2/7 $mg_u = \{b/x_2, \ell(b, \ell(c, t)))/z_2\}$
- 4/8 $mg_u = \{b/x_4, \ell(c, t)/y_4\}$

2

P	Q	R	$P \vee Q$	$Q \vee R$	$P \vee R$	$\neg P$	$\neg P \vee Q \vee R$	$\neg P \vee Q \vee \neg R$	$\neg P \vee \neg Q \vee R$	π_{Σ}
0	0	0	0	0	0	1	1	1	1	$0.3 = 1 - \max\{0.4, 0.7, 0.3\}$
0	0	1	0	1	1	1	1	1	1	$0.6 = 1 - 0.4$
0	1	0	1	1	0	1	1	1	1	$0.7 = 1 - 0.3$
0	1	1	1	1	1	1	1	1	1	$1 = 1 - \max \emptyset$
1	0	0	1	0	1	0	0	1	1	$0 = 1 - \max\{0.7, 1\}$
1	0	1	1	1	1	0	1	0	1	$0.3 = 1 - \max\{0.3, 0.7\}$
1	1	0	1	1	1	0	1	1	0	$0.2 = 1 - \max\{0.3, 0.6\}$
1	1	1	1	1	1	0	1	1	1	$0.7 = 1 - 0.3$
$\Sigma \rightarrow$			0.4	0.7	0.3	0.3	1	0.7	0.8	