PRACTICE TEST I

1. p.24 1.f

2. p.34 6.d

3. Show the following argument is valid:
$P \vee Q \ \wedge \ Q \to \sim R \ \wedge \ R$. Conclusion: P.

4. As in ex (7) p.56: x is y's granddaughter

5. p.66 7.e

6. p71 12.a

Actual test format may be different:

longer, shorter, differently structured questions.

Sol's

1

P	Q	$P\wedge Q$	$\sim(P\wedge Q)$	$\sim P\wedge\sim Q$	$\sim(P\wedge Q)\to(\sim P\wedge\sim Q)$
T	T	T	F	F	T
T	F	F	T	F	F
F	T	F	T	F	F
F	F	F	T	T	T

2 [redacted]

(Today is TKSGIVING) $\longrightarrow$ (Today is TH)

3
1) $P\vee Q$ Premise
2) $Q\to\sim R$ Premise
3) R Premise
4) $R\to\sim Q$ (equivalent to 2)
5) $R\wedge(R\to\sim Q)$ gives $\sim Q$
6) $(P\vee Q)\wedge(\sim Q)$ gives P (Tautolog 11)

4

$$y \downarrow t \downarrow x \qquad W(x)\wedge\Big[\exists t\,\big(P(y,t)\wedge P(t,x)\big)\Big]$$

5 Not a law of logic: $\Leftarrow$ is false: $\exists x\, P(x)\wedge\exists x\, P(y)$ does not mean the two x's are same, as is required.

6 $y''(x)=0$ is $6ax+2b=0$. We must show this equation has a unique solution. $a\neq 0$.

Existence: $x=-b/3a$.

Uniqueness: $6ax+2b=0$ & $6a\bar{x}+2b$; $6a(x-\bar{x})=0$; $x=\bar{x}$.