

Errata and Answers for Review for Exam 2

February 28, 2005

1 Errata

1) **Question:** Which are subformulas of $(A \Rightarrow (\sim B) \wedge ((\sim B) \vee (\sim C)))$?

Should be

1) **Question:** Which are subformulas of $((A \Rightarrow (\sim B)) \wedge ((\sim B) \vee (\sim C)))$?

2 Answers:

1. d
2. (a) OK as is (b) $(\sim B)$ (c) $(A \Rightarrow (\sim B))$
3. (a) If I eat kittens then I am too tall. (b) If I am too tall and eat kittens then I won't fit through the door. (c) $((\sim Q) \wedge (\sim P)) \Rightarrow (\sim R)$
4. (a) $(A \vee B)$ and $(A \wedge B)$ need a connective between them (b) parentheses don't balance (c) parentheses don't balance and $\sim B$ needs parentheses
5. 2^N
6. (a) and (c) are equivalent; (b) and (e) are equivalent; no other equivalencies
7. use truth tables
8. use truth tables
9. (a) $\{1, 4\}$; $\{0, 1, 2, 3, 4, 9, 11, 16, 44, 81\}$; $\{2, 3, 11, 44, 81\}$ (b) $\{1, 4, 81\}$; (c) Even square integers; (d) No ($\{1\}$ is not an element of A , it is a subset of A) (e) yes for all