Feedback — Problem Set 1

Help

You submitted this homework on **Wed 1 Oct 2014 9:26 AM PDT**. You got a score of **40.00** out of **40.00**.

This problem set focuses on material covered in Week 1 (Lectures 1 and 2), so I recommend you to watch both lectures and attempt Assignments 1 and 2 before submitting your answers. The deadline for completing (and submitting) the problem set is Monday October 6 10 at 9:00 AM US-PST. Note that you can save your entries as you work through the problems, and can change them at any time prior to submission, but once you submit your answers no further changes are possible. Note: A downloadable PDF file of this problem set is supplied as an asset to Lecture 2.

Question 1

Is it possible for one of $(\phi \wedge \psi) \wedge \theta$ and $\phi \wedge (\psi \wedge \theta)$ to be true and the other false? (If not, then the associative property holds for conjunction.) [Score: 5 points]

Your Answer		Score	Explanation
○ Yes			
◉ No	✔	5.00	Correct!
Total		5.00 / 5.00	

Question 2

Is it possible for one of $(\phi \vee \psi) \vee \theta$ and $\phi \vee (\psi \vee \theta)$ to be true and the other false? (If not, then the associative property holds for disjunction.) [Score: 5 points]

Your Answer		Score	Explanation
○ Yes			
◉ No	✔	5.00	Correct!
Total		5.00 / 5.00	

Question 3

Is it possible for one of $\phi \wedge (\psi \vee \theta)$ and $(\phi \wedge \psi) \vee (\phi \wedge \theta)$ to be true and the other false? (If not, then the distributive property holds for conjunction across disjunction.) [Score: 5 points]

Your Answer		Score	Explanation
○ Yes			
◉ No	✔	5.00	Correct!
Total		5.00 / 5.00	

Question 4

Is it possible for one of $\phi \vee (\psi \wedge \theta)$ and $(\phi \vee \psi) \wedge (\phi \vee \theta)$ to be true and the other false? (If not, then the distributive property holds for disjunction across conjunction.) [Score: 5 points]

Your Answer		Score	Explanation
○ Yes			
◉ No	✔	5.00	Correct!
Total		5.00 / 5.00	

Question 5

Is showing that the negation $\neg\phi$ is true equivalent to showing that ϕ is false? [Score: 5 points]

Your Answer		Score	Explanation
◉ Yes	✔	5.00	Correct.
○ No			
Total		5.00 / 5.00	

Question 6

Assuming you know nothing more about Alice, which of (a) - (e) is most likely? (Or does (f) hold?)

[Score: 5 points]

Your Answer		Score	Explanation
(a) Alice is a rock star and works in a bank.			
(b) Alice is quiet and works in a bank.			
(c) Alice is quiet and reserved and works in a bank.			
(d) Alice is honest and works in a bank.			
(e) Alice works in a bank.	✔	5.00	Correct! Conjoining any second requirement makes it less likely to be true.
(f) None of the above is more or less likely.			
Total		5.00 / 5.00	

Question 7

Assuming you know nothing more about Alice, which of (a) - (e) is most likely? (Or does (f) hold?)

[Score: 5 points]

Your Answer		Score	Explanation
(a) Alice is a rock star or she works in a bank.	✔	5.00	Correct! Disjoining a second requirement makes it more likely to be true.
(b) Alice is quiet and works in a bank.			
(c) Alice is a rock star.			
(d) Alice is honest and works in a bank.			

○ (e) Alice works in a bank.			
○ (f) None of the above is more or less likely.			
Total		5.00 / 5.00	

Question 8

Identify which of the following are true (where x denotes an arbitrary real number). If you do not select a particular statement, the system will assume you think it is false. [Score: 5 points]

Your Answer		Score	Explanation
☐ $(x > 0) \wedge (x \leq 10)$ means $0 \leq x \leq 10$	✔	0.50	This is the only false one; all the others are true.
☑ $(x \geq 0) \wedge (x^2 < 9)$ means $0 \leq x < 3$	✔	0.50	This one is true.
☑ $(x \geq 0) \wedge (x \leq 0)$ means $x = 0$	✔	0.50	This one is true.
☑ There is no x for which $(x < 4) \wedge (x > 4)$	✔	0.50	This one is true.
☑ $-5 \leq x \leq 5$ means x is at most 5 units from 0.	✔	0.50	This one is true.
☑ $-5 < x < 5$ implies that x cannot be exactly 5 units from 0.	✔	0.50	This one is true.
☑ $(x \geq 0) \vee (x < 0)$	✔	0.50	This one is true.
☑ $(0 = 1) \vee (x^2 \geq 0)$	✔	0.50	This one is true.
☑ If $(x > 0 \vee x < 0)$ then $x \neq 0$.	✔	0.50	This one is true.
☑ If $x^2 = 9$ then $(x = 3 \vee x = -3)$.	✔	0.50	This one is true.
Total		5.00 / 5.00	