

Pin:  
Name:

►. The goal of this problem is to justify a proclaimed equivalency from the §2.2 handout.

Let  $P$ ,  $Q$ , and  $R$  be statements.

1. Complete the below truth table for the two compound statements:

$$(P \vee Q) \implies R \qquad \text{and} \qquad (P \implies R) \wedge (Q \implies R)$$

You may just put in the appropriate boxes directly below either T or F.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
$P$	$Q$	$R$	$P \vee Q$	$(P \vee Q) \implies R$	$(P \implies R)$	$(Q \implies R)$	$(P \implies R) \wedge (Q \implies R)$
T	T	T					
T	T	F					
T	F	T					
T	F	F					
F	T	T					
F	T	F					
F	F	T					
F	F	F					

2. Is  $[(P \vee Q) \implies R]$  logically equivalent to  $[(P \implies R) \wedge (Q \implies R)]$ ? Justify your answer by using part (1) of this problem (you can **not** use the logical equivalences in §2.2Handout/Theorem 2.8).

Of course, use complete sentences.

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