Problem 11e from the book.

"For hiking on the trail to be safe, it is necessary but not sufficient that berries not be ripe along the trail and for grizzly bears not to have been seen in the area"

Where

p: Grizzly bears have been seen in the area

q: Hiking is safe on the trail

r: Berries are ripe along the trail.

This sentence is equivalent to

"For hiking on the trail to be safe, it is necessary that that berries not be ripe along the trail and for grizzly bears not to have been seen in the area

and

for hiking on the trail to be safe, it is not sufficient that berries not be ripe along the trail and for grizzly bears not to have been seen in the area"

I think everyone understands that the first part translates to

$q \rightarrow (\neg r \wedge \neg p)$

In the second quiz section, I said that the second part translates to

$\neg((\neg r \wedge \neg p) \rightarrow q)$

But really, this isn't true. Saying that "x does not imply y" is not equivalent to saying "not(x implies y)." This is because saying that "x does not imply y" means that there is at least one assignment of truth values that violates "x implies y." "not (x implies y)" means that every entry of the truth table has the opposite truth value of "x implies y".

In reality, there is no straightforward logical interpretation that really captures the notion of "x does not imply y." For this reason, you can expect not to see such problems in homeworks or exams.