CSE 103
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Chapter: 1
Section: 1
Exercise: 14

14. Let *p*, *q*, and *r* be the propositions

***p*:** You get an A on the final exam.
***q*:** You do every exercise in this book.
***r*:** You get an A in this class.

Write these propositions using *p*, *q*, and *r* and logical connectives (including negations).

a) You get an A in this class, but you do not do every exercise in this book.

b) You get an A on the final, you do every exercise in this book, and you get an A in this class.

c) To get an A in this class, it is necessary for you to get an A on the final.

d) You get an A on the final, but you don't do every exercise in this book; nevertheless, you get an A in this class.

e) Getting an A on the final and doing every exercise in this book is sufficient for getting an A in this class.

f) You will get an A in this class if and only if you either do every exercise in this book or you get an A on the final.

Solution:

a) $r \wedge \neg q$

b) $p \wedge q \wedge r$

c) $r \rightarrow p$

d) $p \wedge \neg q \wedge r$

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

f) $r \leftrightarrow (q \vee r)$