II.20 The negation of the converse of the statement "If
x < 0 then y < 0" is equivalent to
   (a) y < 0 and x ≥ 0   (b) x > 0 and y ≥ 0 (c) x < 0 or
       y < 0   (d) If y ≤ 0 then x > 0   (e) x < 0 or y ≥ 0.

III.12 Let A,B,C be statements which are either true or
false. Given the hypotheses (i) if A then B and (ii) if
C then B then a valid conclusion is (a) if C then A
   (b) if B then (A or C)   (c) if not B then (A and C)
   (d) if (A or B) then C   (e) if not B then not (A or C)

IV.10 Which of the following is equivalent to the statement
"If not A then (B or not C)" ? (a) If (not B and C) then not
   A (b) If A then (not B or C)   (c) If (not A and B) then
   not C (d) If (not B and C) then A   (e) If (B and not C)
   then A

V.14 The statement "If P then (Q and R)" is true provided
   (a) P is false and Q is false (b) P is true and Q is true
   (c) P is true or R is false (d) (P or Q) is true or R is
   true (e) (P and Q) is false and R is true

VI.18 Which is a valid conclusion to the argument whose two
   hypotheses are (I) If P then Q and (II) Q and not P?
      (a) P or (not Q)   (b) P and Q   (c) If Q then P
      (d) P or Q (e) P and (not Q)

VII.8 Given that the implication "If P then Q" is false,
   then which of the following implications must also be
   false? (a) If Q then P   (b) If Q then (not P)   (c) If (P
   and Q) then Q (d) If (not P) then (P or Q)   (e) If (not
   Q) then (not (P or Q))

VIII.10 If it is known that "if y ≤ 3 then x > z" then which
   of the following must be true?
      (a) If x > z then y ≤ 3   (b) y > 3 and x ≤ z   (c) y > 3
          or x > z   (d) x + 3 ≥ y + z   (e) If y > 3 then x ≤ z

IX.10 Given (I) if x > 3 then y < 7 and (II) either x < 2
   or y > 9 then (a) x < 2   (b) y ≥ 7   (c) x ≤ 3   (d) x > y
   (e) none of (a)-(d)

X.7 If p and q are logical statements then which of the
   following is always true?
      (a) if (p or q) then (if p then q)   (b) if (p and not p)
      then q (c) if p then (p and q)   (d) if (p or q) then q
      (e) if (if p then q) then (p or q)