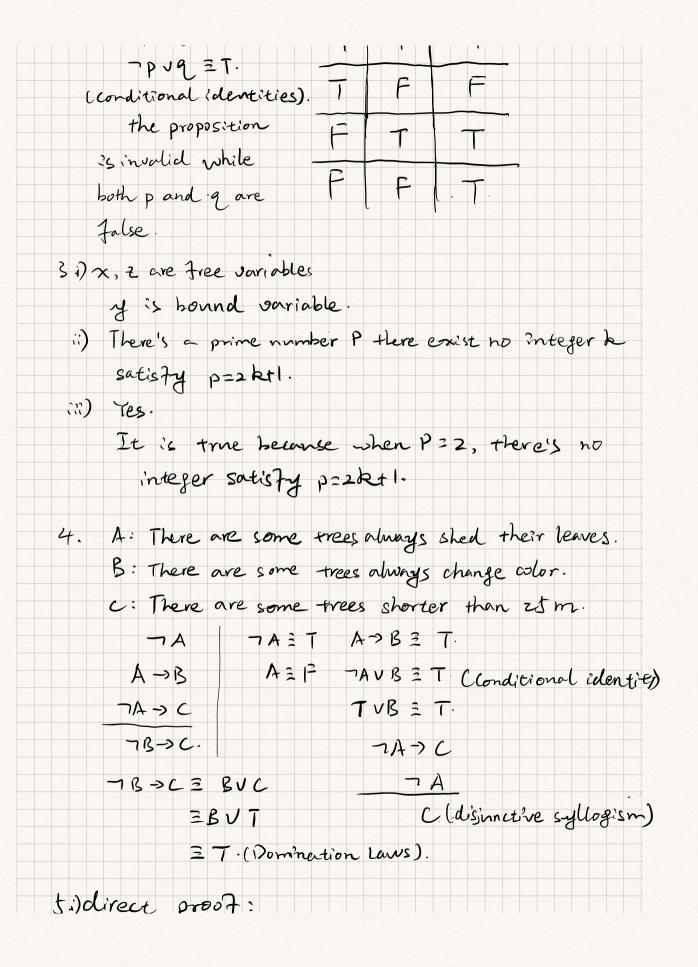
```
Tulun Feng ID: 251115989 western ID: yteng 445.
1. i) the left hand side:
     (PAQ) ->r = 7 (PAQ) Ur = 7 PV7QVY.
    the right hand side:
    (pn 7r) -> 79 = 7 (pn 7r) V79
                三ファンアレフタ
                ₹ 7pv7qvr = left hand side.
  (1) (p-9) v (q-p) = (7pvq) v (7qvp)
               = 7pvqv7qvp
                 三 (フタンタ) V (つなしな)
                 3 T V T 2 T.
2. 1) Valid.
             pva pvr
     7PIT
      PZF 7P 7P
              Disjunctive Syllgism
  2- 9 AY 3 T N T 3 T.
   2) Invalid.
      79 = T. P=T. P->9 = T.
      9= P. 7PV9=T. (conditional identity)
                  FUF 3 T
                    it is invalid.
   3) Invalid.
                    P 9 P 7
      P-)9 3.T.
```



n= x+ y+ 2 assume that & is the least one of the number. n-2= x+y-22 = (x-3) + (y-3). -: 22x, 32y 12x-2 20, y+220. 3 3 20 -n-270 ii) proof by contradiction. assume atbs= is rational. given that a is rational number, biz should also be a rational number. however, bis a rational number 52 is an irrational number. So bis con't be a rational number. = at bb is irrational 6. the contraposition: x is odd i' x2+3x+5 is odd. it x is odd, x2 is odd, 3x is odd. 5 is an odd number. x2+3x+5 is an odd number.