Hw3
GJ: Things equivelent to $\exists x \forall y (P(x,y) \land \forall Q(x,y))$
Jxby(P(x,y) A 7Q(x,y))
177 ] x Vy 7 ( Pox, y) VQ (x, y)).
277 7 ~ ~ 37 (Pcx,y) > Q(x,y))
ifi 7 4~ 7 y (Pox, y) -> (x (x, y)) -
G12: A= \( 1, 2 \).
P(A)={Ø, 513, {2}, {1,2}}.
xEPA) 72 \$, \{\langle  \} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\
BCPLA) B=24=16 possible solutions.
$\phi$ , $\{\phi\}$ , $\{\xi\}$ , $\{\phi\}$ , $\{\psi\}$ , $\{\psi$
Exilet x, JCR, Suppose yex=zy-x, and not both y and x are
zero, krove yzo.
Proof:
Assum y=0, Then x +0. But the equation x=-x 25
Assum y=0, Then x+0. But the equation x=-x 25 a contradiction. Thus y+0 1
Strategy: To use given of form 7P. when the good is a contradiction, try making Pyonr goal
contradiction, try making Pyour fool
Ex: Suppose AIB is disjoint from C and xGA. prove that
7 xGC, then x GB.
Gwen Goal
CAIB)nc=\$\frac{1}{\sigma(1)^2}
THA THE
acc Contradiction.
7,4B ∃ye(A\B)∩C
D-2: <
Proof: Suppose x in C. Assume x & B.
then since XEA, XEB. we have XEAIB. Since XEC, XE (AIB) 1 C. This contradict our
assumption. So XEB. Therefore XEL-7-XEB
ussumperor so me some acces of

 Strategy: To use given of John 7P, reexpress ?t.
To use a given of form P-2 a:
 To use a given of form P-2Q!  Modus ponens: if P is provable, add Q
as given.
 Modus collens: contraposithe
as given.  Modus collens: contrapositive  Zx 3.2.5: Suppose AEB, acA and af BIC, Prace acc.
 lawen (soa)
SACIS acc.
 aeA,
/ adBC
1(acB/afc)
a & B Vacc
aGB-2GC. > AGB.
177 V xe/1->xEB
 $aGA \rightarrow aGI$
Proo7: Since aGA and AGB, aGB. Since af BIC, it
Follows that acc.
( , 7 , 2 , 2 , 4 , )
See Ex 3.2.4 in text.