$\ddot{o}$
$U =$
$U\dagger$
$Ua = \langle Ua, Ua\rangle^{1/2} = \langle UU^\dagger a, a\rangle^{1/2} = \langle a, a\rangle = a.$

^{n}
$\ddot{o}$
G
(X)
X
C
C
X
G
(X)
G
G
(X)
(X)
S_X
X
(X)
X
C
(X)
S_X
X
(X)
X
$/$
$/ \cong (, \times).$

$\det(g\cdot) =$
$\det(g) \in$
$/$
$(, \times)$
$/$
$W \subset$
V
V
$u, v \in$
V
$u+$
W
$v+$
W
$u-$
$v \in$
W
$v-$
$w \in$
$W,$
W
$u+W = v+W iff u-v \in W.$

$H \subset$
G
any
G
$a, b \in$
G
aH
bH
$ab \in$
H
$ba \in$
H
H
$aH = bH iff ab \in H.$

$aH =$
bH
$\exists h_1, h_2 \in$
H
$ah_1 =$
bh_2
$ab =$
$h_1 h_2$
H
$h_2 \in$
H
$h_1 h_2 \in$
H
$ab \in$
H
$ab \in$
H
H
$ab =$
$ba \in$
H
$ah_1 \in$
aH
$h_1 \in$