S subspace of X

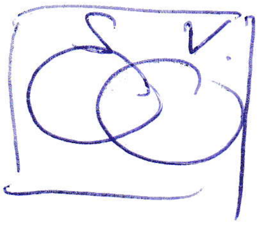
$B \subseteq S$ is closed in S

$\Leftrightarrow \quad B = S\setminus(S\cap V)$ some open $V \subseteq X$.

$= S \cap (S\cap V)^c$.

$S\setminus(S\cap V) = S\setminus V$.

$= S\cap V^c$.



<u>3.2</u> $B \subseteq S$ closed

$\Leftrightarrow \quad B = S\setminus S\cap V = S\setminus V$

$= S\cap V^c$.

<u>3.6</u> (a) $= U = S\cap V$ some open $V\subseteq X$

so U open

(b) U open in X, then $U = S\cap U$

$\Rightarrow$ so U open in S

U closed in X $\Rightarrow U = V^c$ some open V

$X\setminus V$

$\Rightarrow U\subseteq S \Rightarrow U = S\setminus V \Rightarrow U$ closed in S

eg ϕ ex <u>3.2</u>.