Chapter 9

pg. 35: associativity and commutativity for intersections and demorgans laws

$x \in \bigcap_i A_i \iff x \in A_i \ \forall i$

Chapter 10

$B \subset Y \implies f[f^{-1}[B]] \subset B$

$X \twoheadrightarrow Y \implies f[f^{-1}[B] = B$

$A \subset X \implies A \subset f^{-1}[f[A]]$

$X \hookrightarrow Y \implies A = f^{-1}[f[A]]$

$f^{-1}[\bigcup_i B_i] = \bigcup f^{-1} B_i$

this might be an exercise??

$f^{-1}[\bigcap_i B_i] = \bigcap_i f^{-1}[B_i]$

$f^{-1} g{-}1 = (fg)^{-1}$

□