1. Let E^c denote the complement of an event E. Let E, F, G be pairwise independent events with $P(G) > 0$ and $P(E \cap F \cap G) = 0$. Then $P(E^c \cap F^c | G)$ equals **(2007-3 marks)**

(a) $P(E^c) + P(F^c)$ (b) $P(E^c) - P(F^c)$

(c) $P(E^c) - P(F)$ (d) $P(E) - P(F^c)$

(c) $P(E^c \cap F^c / G) = P(E \cup F)^c / G)$

$1 - P(E \cup F / G)$

$= 1 - P(E/G) - P(F/G) + P(E \cap F/G)$

$= 1 - P(E) - P(F) + O$

($\because$ E, F, G are pairwise independent and

$P(E \cap F \cap G) = 0$

$\Rightarrow P(E).P(F) = 0$ as $P(G) > 0$) $= P(E^c) - P(F)$