2D Probability Formulae

1. A and B are two events, such that $P(A) = 0.6$, $P(B) = 0.7$ and $P(A \cup B) = 0.9$.
   Find $P(A \cap B)$.

2. C and D are two events such that $P(C) = 0.2$, $P(D) = 0.6$ and $P(C|D) = 0.3$.

Find:

a) $P(C \cap D)$

b) $P(D|C)$

c) $P(C \cup D)$