Quiz 3 for Statistics 301
Elementary Statistical Methods - Spring 1999
Material Covered: Chapter 6 of notes; Sections 4.6, 4.7 of text
For: 26th February

Name (please print): ____________________________

1. $P(G) = 0.6$, $P(H) = 0.3$, $P(G \cap H) = 0.2$

   a [1] $P(G|H) = \ldots$

   b [1] $P(H|G) = \ldots$

   c [1] $P(\bar{H}) = \ldots$

   d [1] $P(G \text{ or } H) = \ldots$

   e [1] $P(G \text{ or } \bar{H}) = \ldots$

   f [1] True / False Although events $G$ and $H$ are dependent, they are mutually exclusive.
a [1] \( P(G|H) = \frac{P(G \cap H)}{P(H)} = \frac{0.2}{0.3} = 0.67 \)

b [1] \( P(H|G) = \frac{P(G \cap H)}{P(G)} = \frac{0.2}{0.6} = 0.33 \)

c [1] \( P(\bar{H}) = 1 - 0.3 = 0.7 \)

d [1] \( P(G \text{ or } H) = 0.6 + 0.3 - 0.2 = 0.7 \)

e [1] \( P(G \text{ or } \bar{H}) = P(G) + P(\bar{H}) - P(G \text{ and } \bar{H}) = 0.6 + 0.7 - (0.6 - 0.2) = 0.9 \)

f [1] \text{False} \text{ Although events } G \text{ and } H \text{ are dependent, they are mutually exclusive. Yes, dependent because } P(G)P(H) = 0.6(0.3) = 0.18 \neq P(G \cap H) = 0.2, \text{ but, not mutually exclusive because } P(G \cap H) \neq 0.