

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): _____
last first

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

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

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

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

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

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

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] **False** Although events G and H are dependent, they are mutually exclusive.
Yes, dependent because $P(G)P(H) = 0.6(0.3) = 0.18 \neq P(G \cap H) = 0.2$,
but, not mutually exclusive because $P(G \cap H) \neq 0$.