STA 2122 Supplementary Exercise Chapter 3-B

1. P(A) = .40, P(B) = .65, P(B|A) = .32. Find

   a) P(A∩B)
   b) P(A|B)
   c) P(A∪B)
   d) Are events A and B independent? Thoroughly justify your answer.
   e) Are events A and B mutually exclusive? Thoroughly justify your answer

2. P(A) = .75, P(B) = .60. If A and B are independent, find

   a) P(A∩B)
   b) P(A|B)
   c) P(A∪B)

3. P(C) = .54, P(D) = .28. If C and D are mutually exclusive, find

   a) P(C∪D)
   b) P(D|C)

Key

1. a) .128 b) .197 c) .922 d) No, $P(B) = .65 \neq .32 = P(B|A)$
   e) No, $P(A \cap B) = .128 \neq 0$

2. a) .45 b) .75 c) .90

3. a) .82 b) 0