

This quiz covers material from section 7.5. Show your work.

1. (*4 points*) Suppose $P(A) = .5$, $P(B^c) = .4$, and $P(A \cap B) = .3$. Use the proper formulas to get full credit.

a. (*2 pts*) Determine $P(B|A)$.

b. (*2 pts*) Determine if the events A and B are independent.

2. (*2 points*) In a two-child family, what is the probability that both children are girls given that at least one child is a girl? (Assume that the probability of a boy being born is the same as the probability of a girl being born.)

3. (*2 points*) Suppose the events "you eat an ice-cream sundae today" and "you hit the bullseye of a target" are independent events. If the probability that you eat an ice-cream sundae today is .1 and the probability that you both eat an ice-cream sundae today and hit the bullseye of a target is .05, then what is the probability that you hit the bullseye of a target?