

I. A class of ASU students was cross-classified according to gender and class rank. The following data was obtained:

	Junior	Senior	Totals
Female	16	6	22
Male	15	5	20
Totals	31	11	42

Suppose a student is chosen from the class at random. Let J be the event the student is a junior, S be the event the student is a senior, F be the event the student is female, and M be the event the student is male. Find each of the indicated probabilities. For each probability, describe in words (a complete English sentence please!) the probability that you have found. (4 each – 16 total)

1. $P(M)$

2. $P(F \cap J)$

3. $P(J | M)$

4. $P(F | S)$

II. Let A and B be events in a sample space S with $P(A) = .5$, $P(B) = .3$, and $P(A \cup B) = .7$. Please answer the following: (2 each – 4 total)

1. If A and B are independent events find $P(A \cap B)$.

2. If A and B are not independent events find $P(A \cap B)$.