Probability Definitions and Concepts

1. When dealing with independent events, what are the mathematical operation equivalents to the words "and" and "or"?

And \Rightarrow multiply Or \Rightarrow add

2. When we know the probabilities of all events in a sample space, what is the sum of all those probabilities?

100% or 1

Draw three Venn diagram of two events, A and B, then shade in:

- 3. P(A)
- 4. $P(A \cap B)$
- 5. P(not A)



6. In a deck of 52 cards, what is the probability of picking the 2 of diamonds of the top of a well shuffled deck?

1 52

- 7. With a 6-sided die, what is the probability of rolling:
 - a. An even number $\frac{1}{2}$ b. A 2 $\frac{1}{6}$ c. An odd number $\frac{1}{2}$ d. A number greater than 4 $\frac{1}{3}$ e. A prime number $\frac{1}{2}$
- 8. Same as #7, but with a 20-sided die.
 - a) $\frac{1}{2}$ b) $\frac{1}{20}$ c) $\frac{1}{2}$ d) $\frac{16}{20} = >\frac{4}{5}$ e) $\frac{8}{20} = >\frac{2}{5}$
- 9. Define the compliment of an event. Then, determine the compliment of P(A) = .78. The compliment of an event are the outcome(s) where the event does not happen. If P(A) = .78, then $P(A^c) = .22$
- 10. If I flip a coin three times, what is the probability of getting three heads? Three tails?
 P (HHH) = 0.125
 P (TTT) = 0.125