

Sets and Counting Review

1. If $n(U) = 150$, $n(A) = 37$, $n(B) = 84$, and $n(A \cup B) = 100$, find $n(A \cap B)$.
2. How many cards in a standard deck of 52 cards are aces or spades?
3. A department store surveyed 428 shoppers and obtained the following information
 - 214 shoppers made a purchase.
 - 299 shoppers were satisfied with the service.
 - 52 of those shoppers who made a purchase were not satisfied with the service they received.How many shoppers were satisfied with the service but did not make a purchase?
4. If $U = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$, $A = \{1, 2, 3, 4, 5\}$, and $B = \{4, 5, 6, 7, 8\}$, then find the set $(A \cap B)$.
5. If you buy 3 pairs of jeans, 4 sweaters, and 2 pairs of boots, how many new outfits (each consisting of a pair of jeans, a sweater, and a pair of boots) will you have?
6. From an English class consisting of 24 students, three students are to be chosen to give speeches in a school competition. In how many different ways can the teacher choose the 3 students if the order in which the students are selected is important?
7. From an English class consisting of 24 students, three students are to be chosen to give speeches in a school competition. In how many different ways can the teacher choose the 3 students if the order in which the students are selected is not important?
8. A soccer league has eight teams. If every team must play every other team once in the first round of league play, how many games must be scheduled?