

COMBINATORICS ASSIGNMENT

Full solutions with therefore statements and all work are required.

1. A student must answer 7 of 10 questions on an exam. How many different sets of questions can be answered if
 - a) there are no restrictions?
 - b) four of the first five questions must be answered?

2. A pizza can be ordered with any number of 8 different toppings OR with no toppings at all.
 - a) Find the number of 4 topping orders available.
 - b) Find the total number of possible orders.

3. How many five-digit odd numbers can be formed from the digits of the number 5 390 462?

4. In the game of poker, each player is dealt a hand of five cards. How many hands contain
 - a) all hearts?
 - b) exactly 2 aces?
 - c) at least one diamond?
 - d) a full house?

5. A club has 25 members. In how many ways can
 - a) a committee of 3 members be chosen?
 - b) the offices of president, vice-president, secretary, and treasurer be filled?
 - c) the members from (b) stand in line for a picture if the president and vice-president must stand side by side?

6. In how many ways can 8 boys sit in a row if
 - a) there are no restrictions?
 - b) Jimmy and Bobby must be kept apart?