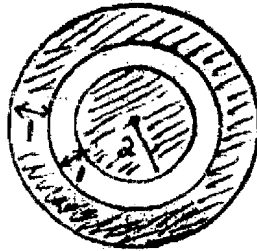


Give answers as integers or fractions in simplest form, unless otherwise directed.

1. The Cheer squad is selecting a new uniform. There are 5 styles of tops, 15 styles of skirts, and 6 styles of lettering to choose from. How many ways can 1 top, 1 skirt, and lettering be selected?
2. There are 10 questions on a true-false quiz. How many ways can all 10 questions be answered?
3. You need to stack 7 books on a shelf. In how many different orders can the books be stacked,
 - a) if all 7 books are used?
 - b) if you decide to only stack 5 of the 7 books?
 - c) if the smallest book must be on top of the stack of 7 books?
4. In how many ways can 3 identical diamonds, 2 identical rubies, and 4 identical sapphires be arranged in a row in a display case?
5. How many positive multiples of 5 that are less than 600 can be formed using only the digits 2, 3, 4, 5, and 6, if digits may be repeated?
6. Eighteen chefs participate in a cooking competition.
 - a) How many ways could they be paired up?
 - b) How many ways could they finish in 1st, 2nd, and 3rd places?
7. A frozen yogurt shop offers 12 different flavors of frozen yogurt and 20 different toppings. Find the number of ways you could choose:
 - a) 2 different yogurt flavors and 3 different toppings?
 - b) 1 or 2 different toppings for your yogurt?
8. Find and simplify the 7th term of $(3x - \sqrt{2})^{10}$.
9. Use Pascal's triangle to expand and simplify $(x^2 - 3y)^5$.
10. Two six-sided dice are rolled. Find the probability that when they land the dice will be showing:
 - a) a sum that is a multiple of 6 or greater than 9
 - b) a sum that is not 3 or 4
 - c) a sum that is even and less than 5
11. Find the probability that a dart thrown at the target shown hits somewhere in the shaded region. Round the answer to the nearest hundredth.



12. Twenty students attend a leadership conference. Ten are in ASB, 8 participate in athletics, and 7 do both. Find the probability that a randomly selected student is:
 - a) not in athletics
 - b) in ASB or athletics

