

Section 11.1 Extra Practice

- Use an organized list or a tree diagram to identify the possible arrangements for each situation. If you use abbreviations, state what each represents.
 - How many ways can an ice cream cone be constructed with 3 different scoops of ice cream flavours: strawberry, vanilla, and chocolate?
 - How many two-letter arrangements can be made using the letters in the word DUCK?
 - How many different outfits can you put together if you own 3 shirts, 2 pairs of pants, and 2 pairs of runners?
- How many five-digit numbers can be made from the digits 2, 3, 4, 7, and 9 if no digit can be repeated?
- Write an expression for each, using factorial notation.
 - ${}_8P_r$
 - ${}_nP_5$
 - ${}_nP_r$
- Evaluate each expression.
 - ${}_9P_2$
 - ${}_8P_3$
 - ${}_5P_4$
- How many two-digit numbers can be made from the digits 2, 3, 4, 7, and 9 if no digit can be repeated?
- How many arrangements can be made using all the letters of each word?
 - VICTORIA
 - ABBOTSFORD
 - OSOYOOS
- A lacrosse team's record over a season was 15 wins, 4 losses, and 2 ties.
 - In how many different orders could this record have occurred?
 - If you know that the team started the season strongly with five straight wins, how many orders are possible for the team's results?
- Determine the number of arrangements of the letters of the word TATTOO under each condition:
 - without further restriction
 - begins with a T
 - begins with two Ts
 - begins with three Ts
- Express $501 \times 500 \times 499 \times 498$ in the form ${}_nP_r$.
- Solve for the variable.
 - ${}_nP_2 = 56$
 - ${}_nP_6 = 5({}_nP_5)$

