Chapter 4: Review Counting Methods

- Make sure you have completed all of the previous homework assignments from sections 4.4, 4.6 and 4.7, including the additional practice problems I photocopied for you.

- Read *FREQUENTLY ASKED Questions* on page 292 - 293.

- Complete the following from *PRACTISING* on page 293 - 294:
  #1 – 3, 5 – 19

- Complete the *Chapter Self-Test* on page 291
  #1 – 5, 7 – 9

WYNTKABATD

Section 4.1

- How to use the Fundamental Counting Principle to solve "AND" counting problems (multiple decisions with options to choose from).
- How to create an outcome table for situations involving a limited number of outcomes.
- How to create a tree diagram for situations involving a limited number of outcomes.
- How to create an ordered list for situations involving a limited number of outcomes.
- Recognize when the fundamental counting principle can be used and when it can't.
- Recognize when "cases" are involved.
- Using a Venn diagram or Principle of Inclusion and Exclusion to solve an "OR" counting problem.

Section 4.2

- How to evaluate a factorial or expressions involving multiple factorials.
- How to manipulate factorial expressions involving numbers and variables.(expand or collapse)
- How to simplify a factorial expression involving a variable.
- Solving a counting problem using a factorial.

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Section 4.3
- Understand and evaluate nPr notation.
- Solving counting problems using the permutation formula.
- Solving counting problems involving permutations with restrictions
- Solving counting problems involving permutations and FCP
- Solving counting problems involving permutations and cases

Section 4.4
- Counting permutations when not all objects are distinguishable (some objects are identical).
- Applying the permutations when some objects are identical strategy to counting paths on a grid.
- Solving counting problems using the permutations when some objects are identical strategy and restrictions or conditions are imposed.

Section 4.6
- Understand and evaluate both types of combinations notation: nCr and $\binom{n}{r}$
- Solving counting problems using the combinations formula.
- Solving counting problems involving combinations with restrictions
- Solving counting problems involving combinations and FCP
- Solving counting problems involving combinations and cases

Section 4.7
- Choosing the correct strategy for solving a counting problem.