Writing and Study Skills Services – Laurier Brantford
Math and Statistics Handout
Categorizing Questions and Skills

Math courses cover a wide range of topics. Questions from different chapters or sections require different procedures and skill sets. Prepare to tackle a new question by deciding what broad area of skills you will need to solve it, and then choose a procedure you can follow.

- You can prepare to do this in advance if you identify skills used in each chapter as you work through the course.
- Below are some ideas to get you started thinking about types of questions asked in various courses.

	In questions with phrases/keywords like:	These procedures/skills are often needed:
Math and Teaching	Types of order, highest level of order	Using axioms (reflexivity, symmetry, transitive), testing for the first and second trichotomy, check for least element
	If…then p, q	Use truth tables. Remember rules for *and*, *not*, *or*, and *if…then*. Go step by step, even if the problem looks complex.
Statistics	Variability	Measured by *range*, *inter-quartile range* or *variance*. Variance is the most accurate, and is used for calculations.
	Normal Distribution	Z-scores will be involved – comparing them, finding z-scores for given data etc.
Calculus	Maximum/minimum (e.g. cost vs. profit; minimizing time or distance)	Find the max or min of a curve - where is the tangent 0?
	Rate of change (e.g. speedometer; water flowing simultaneously in and out of a rain barrel)	Use either an analytical model or graphical representation of a function of time f(t)

TIP: A good method for creating categories is to look at each chapter and write out sample problems and solutions for that chapter. This will help you recognize questions and decide what mathematical methods you should use to solve them.

For more in-depth examples of determining what procedures are needed for given questions, see pages 24-33 in *How to Study Mathematics: Effective Study Strategies for College and University Students* by Peter Schiavone (Toronto: Prentice Hall, 1998).