Ground rules and topics for the common final exam
Math 42

General information. The Math 42 common final will be held:

- **Date:** Saturday, May 20, 2023
- **Time:** Start time: 10:30am (please arrive by 10:15am)
- **Room:** MacQuarrie Hall 324

The final will be a timed test of 2 hours and 15 minutes, covering **everything** we have done this semester (yup, **EVERYTHING**). This includes all three previous review sheets and the material from 9.1. No books, notes, calculators, etc., are allowed.

Now, I don't write the exam, so I can't really make definitive promises about what will be on the exam. However, my guess is that most of the exam will rely on understanding the homework and the definitions and theorems that lie behind them. If you can do all of the homework, and you know and understand all of the definitions and the statements of all of the theorems we've studied, you should be in good shape.

Definitions. The most important definitions and symbols we have covered are:

9.1	relation from A to B	a is related to b by R
	relation on a set A	reflexive relation
	symmetric relation	antisymmetric relation
	transitive relation	composite relation
	R^n (relation)	

Theorems, results, algorithms. The most important theorems, results, and algorithms we have covered are listed below. You should understand all of these results, and you should be able to cite them as needed. You should also be prepared to recite named theorems.

Sect. 9.1: R is transitive if and only if all $R^n \subseteq R$.

Types of problems. You should also know how to do the following general types of problems, some of which are straight computations, and some of which require explanation. (Note also that on the actual exam, there may be problems that are not one of these types. Nevertheless, it will be helpful to know how to do all these types.)

Sect. 9.1: Determining if a relation R is reflexive, symmetric, anti-symmetric, or transitive, when R is given by ordered pairs, verbal description, equations in x and y.