

**Tip.** Don't start working! Read the whole exam first. You may wish to start with the questions that are easiest for you.

**Tip.** Neatness, cleanliness and organization count, here and everywhere else!

**Tip.** In math exams, "show" means "prove".

**Tip.** In math exams, "state" means "write the statement of, in full".

**Tip.** In math exams, yes/no answers must be accompanied with a proof.

**Tip.** "If and only if" always means that there are two things to prove.

**Tip.** Quote any theorem you use!

**Tip.** As always in math exams, when proving a theorem you may freely assume anything that preceded it but you may not assume anything that followed it.

**Tip.** Show all intermediate steps!

**Tip.** No need to copy the statements to your notebook, and no need to justify your answers. Note that a statement is considered "true" only if it is **always** true, and not just **sometimes**.

**Tip.** It is always an excellent idea to substitute your solutions back into the equations and see if they really work.

**Tip.** In math exams, "find" means "find and explain how you found".

**Tip.** Here and almost always, a concise yet precise solution is better than a lengthy roundabout one.

**Tip.** For this problem, you may freely use everything stated in class.

**Tip.** "There exists a unique" means two things: "there exists", and "if/once exists, it is unique". Both require a proof!

**Tip.** Once you have finished writing an exam, if you have time left, it is always a good idea to go back and re-read and improve everything you have written, and perhaps even completely rewrite any parts that came out messy.

**Tip.** No instructions were given as for *how* to compute, so you can use any method you wish.

**Tip.** You'd probably be wise to sketch your work: without that, you forfeit any chance of getting partial credit in case your end results are wrong.