

Name _____ Test 3 – Coronavirus Edition, Spring 2020

Instructions:

- The test opened at 10:00am. The test is designed for 50 minutes plus an additional 25 minutes for technical issues dealing with uploading your solutions. The test must be submitted by 11:15am.
- This test is open notes, book, internet, etc. You may use any static resources you like, but may not ask any person for assistance. As such, significantly more points will be weighted on the explanations and work than the answers themselves. Seriously, very clearly show your work, if it looks like a computer algebra system gave you an answer and you don't understand what it means, you will not receive credit.

Practice Test Questions: For the purpose of the practice test, you may earn 5 bonus point on the actual test by completing the question below and submitting your response. What follows afterward is an outline of what to expect on the actual test.

- 1) What is $2 + 2$?

Test Questions/Topics

- 1) Perform some modular arithmetic. Show your work. (10 points)
- 2) Solve an equation in modular arithmetic. Show your work. (10 points)
- 3) Show that a relation is reflexive/symmetric/transitive/antisymmetric. Show your work. (20 points)
- 4) Find a counterexample to show that a relation is not reflexive/symmetric/transitive/antisymmetric. Show your work. (20 points)
- 5) Graph a function. (10 points)
- 6) Show that a function is one-to-one/onto. Show your work. (20 points)
- 7) Find a counterexample to show that a function is not one-to-one/onto. Show your work. (10 points)