

Same instructions as Mission 1. Thanks!

**Problem 61** Your signature below indicates you have:

(a.) I read pages 76-100 of Stillwell's *Elements of Number Theory*: \_\_\_\_\_.

**Problem 62** exercise 5.1.1 page 78

**Problem 63** exercise 5.1.2 page 78

**Problem 64** exercise 5.1.3 page 78

**Problem 65** exercise 5.1.4 page 78

**Problem 66** exercise 5.2.1 page 79

**Problem 67** exercise 5.2.2 page 79

**Problem 68** exercise 5.3.2 page 81

**Problem 69** exercise 5.3.3 page 81

**Problem 70** exercise 5.4.1 page 83

**Problem 71** exercise 5.4.2 page 83

**Problem 72** exercise 5.4.3 page 83

**Problem 73** exercise 5.4.4 page 83

**Problem 74** exercise 5.4.5 page 83

**Problem 75** exercise 5.6.1 page 90

**Problem 76** exercise 5.6.2 page 90

**Problem 77** exercise 5.6.3 page 90

**Problem 78** apply the pigeonhole principle to a class which has 41 students attending but just 40 seats.

**Problem 79** an infinite number of cockroaches infest an apartment building with 42 apartments. Apply the pigeonhole principle to make a disturbing statement about the folks who leave food out.

**Problem 80** *and now for a bit of nostalgia:* what is the remainder of  $2^{432}$  divided by 7 ?