***Pretest Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***Number Theory and Internet Security***

1. Laverne and Shirley are basketball coaches. Laverne has 165 in her age group, and Shirley has 154 in her age group. Each coach is able to divide her girls into the same size groups with no girls left over. Find the size of a group that would include the most girls.

 

1. You purchase a can of floor paint from Lowes that will cover 300 square feet. You wish to paint a square in your basement for a dog pen. Without a calculator, find the dimensions of the square to the nearest inch.

 

1. Suppose you win the super-duper mega lottery and you take home $\$3^{10000}. $You will divide it among your 7 friends and keep whatever is left over.

 

1. Suppose Hansel asks his employee, Derek, to send him the last two digits of his social security number. Their shared key is 7. Using the “exclusive or” operation, Derek’s encrypted message is:

 1 0 1 0 0

What are the last two digits Derek’s social security number?

