Fall 2018 COT 3100 Section 1 Quiz #2 Chapter 4: Number Theory

Name: _____

Lab Section: 18(R9) 19(R10) 20(R11) 21(T2) 22(T3) 23(T4) 24(T5)

1) (15 pts)

(a) (10 pts) Find one ordered pair of integers (x, y) that satisfies the equation $196x + 83y = 1$.

(b) (3 pts) Using your work from part (a), determine $83^{-1} \bmod 196$. Please give an answer in between 0 and 195, inclusive.

(c) (2 pts) Using your work from part(a), list the set of all ordered pairs of integers (x, y) that Satisfy the equation $196x + 83y = 1$.

Please clearly mark each of your final answers with a box around each answer, and clearly indicate which of the three parts each answer is for.

2) (5 pts) How many divisors does the number 21,000,000 have? In order to receive full credit, you must utilize the method shown in class.

3) (5 pts) How many zeroes are at the end of 375!?