

# Quiz 1

Name \_\_\_\_\_

Math 173A, 3PM

Please justify all your answers

October 3, 2019

Please also write your full name on the back

1. Fill in the blank or answer with “True” or “False”.

- (a) True or false? If an integer  $a$  divides the product  $bc$ , with  $b$  and  $c$  integers, then  $a$  must divide  $a$  or  $b$ . \_\_\_\_\_
- (b) Two integers  $a$  and  $b$  are said to be \_\_\_\_\_ if their greatest common divisor is 1.
- (c) There are \_\_\_\_\_ possible simple substitution ciphers on an alphabet with  $n$  symbols.
- (d) The Caesar cipher on an alphabet with  $n$  symbols has \_\_\_\_\_ keys.

2. Compute the greatest common divisor of 4883 and 4369 using the Euclidean algorithm.