1.a. Yes because multiplying any number like 2 with zero gives us zero.

b. Yes because two times -151 +1 = -301.

c.Yes as due to the property 2(6ab) = 2k.

d.Yes if 10a+8b+1 can be reduced to 2(5a + 4b) + 1 where 5a + 4b is an real number(integer) so its k. It can be symbolized as 2k

e. Yes as anything can be 2k or 2k plus one

2. No 1 !>1. One is not greater than one so its not prime.

b.Yes as any n greater than one we have n=rs where r =n while also at the same time s =1.

c.2,3,5,7,11,13

d.4,6,8,9,10,12

3. TO set up the proof imagine theres a num that’s even and odd.

This would mean the following is true:

2k=2k+1

Put in 0 and you get

0=1 which is false so there isn’t a integer that’s even and odd.