

1. Decipher the message:

BSIZ JPKD IWPJ

knowing it was encoded with an affine cipher with key $a = 19$ and $b = 12$.

2. Suppose $d = \gcd(31160, 28704)$.
 - (a) Find d
 - (b) Find k, l such that $d = 31160 \cdot k + 28704 \cdot l$.
3. For each of the following find $a^{-1} \pmod{m}$ or explain why no such inverse exists. That is, find c such that $ac \equiv 1 \pmod{m}$.
 - (a) $a = 1860, m = 298531$
 - (b) $a = 228252, m = 1166897$.
4. (Wait until Wednesday) Find $\phi(3385800)$
5.
 - (a) Get a picture of you with Globalization RA, PA (other than CaroLynn) or professor (other than me).
 - (b) Get a picture of a place to buy food on campus that you have never bought food at.