Name: _____

Directions: Show all work. No credit for answers without work.

1. [**2 points**] In the divisibility lattice, which integer(s) are at the bottom? Which integer(s) are at the top?

2. [**4 points**] Let a, b, and m be integers, where $m \neq 0$. Prove that if the divisions $\frac{a}{m}$ and $\frac{b}{m}$ have the same remainder, then $m \mid a - b$.

3. [**4 points**] Let $d = \gcd(56823, 2491)$. Use the extended Euclidean algorithm to find d and express d as an integer combination of 56823 and 2491.