Assignment 6, due March 4

Problem 1

Find all the units of \mathbb{Z}_{30} .

Problem 2

Let n be an even natural number. Show that $\phi(n)/n \leq 1/2$.

Problem 3

For which natural numbers n is $\phi(n) \equiv 4 \pmod{8}$?

Problem 4

Find all n such that $\phi(n) = 2n/5$.

Problem 5

Find all *n* for which $gcd(n, \phi(n)) = 1$. **Hint:** Consider the prime factorization of *n*.