Midterm 1
time: 60 minutes

1. Prove that $11|10^n - (-1)^n$.
2. Prove that, for positive integers a and b, $gcd(a, b) = gcd(a, a + b)$.
3. Wheat can be shipped in 60 or 80 kg containers. How many containers of each kind one needs to ship 440 kg of wheat?
4. Find an integer z that, when divided by 7, 5, 3, 11, leaves remainders 3, 2, 1, 9, respectively.
5. Compute $11^{195}(mod 720)$.

Midterm 1
time: 60 minutes

1. Prove that $11|10^n - (-1)^n$.
2. Prove that, for positive integers a and b, $gcd(a, b) = gcd(a, a + b)$.
3. Wheat can be shipped in 60 or 80 kg containers. How many containers of each kind one needs to ship 440 kg of wheat?
4. Find an integer z that, when divided by 7, 5, 3, 11, leaves remainders 3, 2, 1, 9, respectively.
5. Compute $11^{195}(mod 720)$.

Midterm 1
time: 60 minutes

1. Prove that $11|10^n - (-1)^n$.
2. Prove that, for positive integers a and b, $gcd(a, b) = gcd(a, a + b)$.
3. Wheat can be shipped in 60 or 80 kg containers. How many containers of each kind one needs to ship 440 kg of wheat?
4. Find an integer z that, when divided by 7, 5, 3, 11, leaves remainders 3, 2, 1, 9, respectively.
5. Compute $11^{195}(mod 720)$.