

MATH 130: Spring 2011
Proofs for Exam 2

The last question of Exam 2 will be one of the following:

- One of: State and prove the Divisibility Test for 2, 3, 4, 5, 8, 9, 10 or 11.
- State and give a picture proof of the Divisibility Lemma (Lemma 2.5 in P & B).
- One of: Give both a picture proof and an algebraic proof that the sum of an even number and an odd number is odd, that the sum of two even numbers is even, that the sum of two odd numbers is even, or anything in that vein.
- One of: Give both a picture proof and an algebraic proof that the product of two odds numbers is odd, the product of an even number and any whole number is even, or anything in that vein.
- Prove that the smallest factor of any whole number $N > 1$ is a prime.
- Prove that there are infinitely many primes.

Note that some of these questions ask you to *state* the theorem. Make sure that you know what that means; points will be taken off if you cannot precisely state the theorem.