

PHILADELPHIA UNIVERSITY
DEPARTMENT OF BASIC SCIENCES

Exam 1

Number Theory

24–11–2011

Solutions must be complete in order to receive full credit.

1. Determine if 589 is prime or composite, using trial division.
2. Evaluate $\gcd(3150, 720)$ using (a) prime factorization and (b) Euclidean algorithm.
3. The number 101 is prime. Evaluate $98! \% 101$.
4. Find all integers x such that

$$x \equiv 2 \pmod{9}$$

$$x \equiv 7 \pmod{10}$$

$$x \equiv 5 \pmod{11}$$

–Amin Witno

The list of primes below 200.

2	3	5	7	11	13	17	19	23	29
31	37	41	43	47	53	59	61	67	71
73	79	83	89	97	101	103	107	109	113
127	131	137	139	149	151	157	163	167	173
179	181	191	193	197	199				