

Number theory

Lesson 4

Divisor: A divisor is something such that when a given number is divided by it, the quotient is an integer

- 5 is a divisor of 10
- 7 is not a divisor of 10
- 1 is a divisor of 10
- What are the divisors of 10?
 - ◆ 1, 2, 5, 10

Factor: a factor is the same thing as a divisor

- Find all factors of 20
 - ◆ 1, 2, 4, 5, 10, 20

How many ordered pairs of integers (a, b) are there such that $50/a = b$

Prime number: a number that is divisible by only itself and one

- 1 is not prime
- Is 2 prime?
- 3?
- 4?
- 5?

How many primes less than 100 have 7 as the ones digit? (Assume the usual base ten representation)

- (A) 4 (B) 5 (C) 6 (D) 7 (E) 8

Trick for $a + b = 885$, a and b are both prime

Prime factorization: writing a number as a product of primes only

- What is the prime factorization of 20?
- What is the prime factorization of 30?

Formula to find number of divisors

GCM, LCM

The least common multiple of a and b is 12, and the least common multiple of b and c is 15. What is the least possible value of the least common multiple of a and c ?

- (A) 20 (B) 30 (C) 60 (D) 120 (E) 180

Remainder

Mod