

Lecture Notes

Notes

- A **prime number** has *two different factors*, itself and 1.
  - The number 2 is prime because it has the factors 2, 1
  - The number 2 is the only even prime number.
- A **composite number** has *more than two* factors.
  - The number 6 is composite because it has the factors 6, 1, 3, 2
- The number 1 is **neither** prime nor composite. Although 1 has two factors, they are the *same factors*.
  - The number 1 is neither prime nor composite because it has the factors 1, 1
  - The number 1 is the only number that is neither prime nor composite.
- All prime numbers bigger than the number 2 are odd. See chart below.
- However, not all odd numbers are prime.
  - The number 15 is odd, but it has the factors 15, 1, 3, 5. Thus 15 is a composite number.
- Prime numbers continue indefinitely.
- *You must memorize* the prime numbers in the chart below **up to number 47**.
  - Knowing prime numbers is useful for understanding operations on fractions.
  - Notice that prime numbers are not in the multiplication facts table. The reason is because we cannot say that one number times another number equals a prime number, except the prime number itself and 1.
  - For example, what number times what number equals 17? The only factors are 1 and 17, which makes it a prime number. And that is why the number 17 is not in the multiplication facts table.
  - Conversely, numbers from the multiplication facts table are not listed in the chart below because they are all composite numbers (excluding the  $1 \times$  number, row / column).

**PRIME NUMBERS FROM 2 TO 97**

**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**

Determine whether the following number is prime, composite, or neither.

27

27 is which of the following?

- Prime
- Composite
- Neither

Determine whether 41 is prime, composite, or neither.

Is 41 prime, composite, or neither?

- A. Composite
- B. Prime
- C. Neither

Determine whether the number is prime, composite, or neither.

1

Is 1 prime, composite, or neither?

- A. neither
- B. composite
- C. prime