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.
- I recommend that you internalize the prime numbers in the chart *up to number 53*.
    - 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

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