Absolutely, let's simplify things and focus on the key aspects of the problem.

1. **The Game of Triangulation**:

   - Imagine you're playing a game of "find your position" using signals from satellites.

   - You have three satellites, each sending signals to your GPS receiver. These signals contain information about the satellite's position and the time the signal was sent.

2. **Your Mission**:

   - Your mission is to figure out exactly where you are on Earth's surface using these satellite signals.

   - To do this, you need to calculate your position coordinates (latitude, longitude, and altitude or x, y, z in a 3D space).

3. **Tools You Have**:

   - Each satellite's signal gives you a pseudo-range measurement. This is like a rough estimate of how far you are from that satellite.

   - With signals from three satellites, you can triangulate your position. Think of it like this: each satellite's signal creates a sphere of possible locations around that satellite. Where these spheres intersect is your estimated position.

4. **Your Strategy**:

   - Start by collecting the pseudo-range measurements from each satellite.

   - Use these measurements to calculate your estimated position. This involves solving a system of equations or using iterative methods (like convex optimization) to refine your estimate.

   - Adjust your estimated position until it matches the observed pseudo-range measurements as closely as possible.

5. **Keep It Minimal**:

   - Focus on understanding the basic principles of triangulation: using signals from multiple satellites to pinpoint your position.

   - You don't need to delve too deep into complex mathematical techniques unless required for your specific problem. The iterative process and basic geometric principles should suffice for most applications.

6. **Practice and Patience**:

- Triangulation can take some practice to master. Keep experimenting with different scenarios and datasets to improve your understanding.

- Don't worry about getting it perfect the first time. It's a process of learning and refining your skills over time.

In essence, your goal is to use the signals from three satellites to accurately determine your position on Earth. Focus on understanding the fundamental concepts and practice applying them in practical scenarios.

Certainly! Let's break down these concepts:

1. **Solving a System of Equations**:

- One approach to determining your position in GNSS (Global Navigation Satellite System) is by setting up and solving a system of equations. These equations represent the distances (pseudo-ranges) between your receiver and multiple satellites.

- For example, if you have signals from three satellites, you can set up three equations, each representing the distance from your receiver to a satellite. These equations can be nonlinear due to the squared terms in the distance calculations.

- By solving this system of equations, you can find the coordinates (latitude, longitude, altitude or x, y, z) that best match the observed pseudo-ranges. This is often done using mathematical techniques such as least squares optimization.

2. **Iterative Methods**:

- The iterative approach involves refining your estimated position through successive iterations or steps. It's like a trial-and-error process where you start with an initial estimate and then make adjustments to improve the accuracy of your estimate.

- In the context of GNSS positioning, iterative methods can include techniques like convex optimization, where you iteratively adjust your estimated position based on observed pseudo-ranges until you minimize the overall error.

- The iterative process continues until your estimated position converges to a solution that closely matches the observed pseudo-ranges from the satellites.

In summary, these are two different approaches to the same goal of determining your position using signals from satellites:

- **System of Equations Approach**: Involves setting up and solving a system of equations representing distances to satellites.

- **Iterative Methods Approach**: Involves refining your estimated position through iterative adjustments based on observed pseudo-ranges, often using techniques like convex optimization.

Both approaches aim to improve the accuracy of your estimated position by incorporating observed data from the satellites and minimizing errors in the calculations.