Problem

Let's consider a second-price, sealed-bid auction:

- An object is for sale with a reserve price.
- We have several potential buyers, each one being able to place one or more bids.
- The buyer winning the auction is the one with the highest bid above or equal to the reserve price.
- The winning price is the highest bid price from a non-winning buyer above the reserve price (or the reserve price if none applies)

Example

Consider 5 potential buyers (A, B, C, D, E) who compete to acquire an object with a reserve price set at 100 euros, bidding as follows:

A: 2 bids of 110 and 130 euros
B: 0 bid
C: 1 bid of 125 euros
D: 3 bids of 105, 115 and 90 euros
E: 3 bids of 132, 135 and 140 euros

The buyer E wins the auction at the price of 130 euros.

Goal

The goal is to implement an algorithm for finding the winner and the winning price. Please implement the solution in PHP. Tests should be separated from your algorithm. We should be able to build and run your solution, tests and code coverage locally without installing anything on our side.

What do we expect?

When we evaluate the home task we mainly focus on: the algorithm, its complexity & correctness, test coverage and software engineering best practices: readability, reusability, idiomatic code style, OOP, solid principles etc.