Use the *how to solve it method* to solve (1) through (2):

1. The population of Germany from 2000 through 2021 can be given by

$$P(t) = -14.83t^2 + 95.9t + 82{,}276$$

Where t is the year, with $t = 0$ corresponding to 2000.

A. What will the population of Germany be in 2051?
B. When is the population of Germany predicted to peak?

2. The path of a diver is given by:

$$y = -0.5x^2 + x + 17.5$$

where y the height (in meters) and x is the distance from the diving board. If the diver jumps off the diving board at $x = 0$, where do they land in the water?