A rectangular swimming pool is to be built with an area of 1800 square feet. If the length of the swimming pool is \( L \) ft. and the width is \( W \) ft., then \( LW = 1800 \) sq. ft.

The owner wants 5-foot wide decks along either side and 10-foot wide decks at the two ends. Thus, the area needed for the pool and decks is \( A = (L + 20)(W + 10) \) sq. ft.

What should be the length and width of the pool in order that the project takes up the least area? To do this, you must minimize the area \( A = (L + 20)(W + 10) \).

Because \( A \) is in terms of two variables, you must do something to get an expression for \( A \) in terms of one variable before you can take derivatives and use calculus to minimize \( A \).