1. Let \( x \) = each of the two sides of the lot, and \( y \) = the third side opposite the hotel wall. Then the total length of the fencing, \( L = 2x + y \), and the enclosed area, \( A = xy = 12,800 \).
   Since \( y = 12,800/x \), then \( L = 2x + 12,800/x \)
   To make \( L \) a minimum with respect to \( x \), set \( dL/dx = 0 \)
   Thus, \( dL/dx = 2 - 12,800/x^2 = 0 \), and solving that we get \( x = 80 \) ft.
   Then, \( y = 12,800/x = 12,800/80 = 160 \) ft.

2. The total length of the fence is \( L = 2x + y = 160 + 160 = 320 \) ft.