1. The demand for tickets to an amusement park is given by

\[ p = 70 - 0.02q \]

where \( p \) is the price of a ticket in dollars and \( q \) is the number of people attending at that price.

(a) What price generates an attendance of 3000 people? What is the total revenue at that price? What is the total revenue if the price is $20?

(b) What attendance maximizes revenue?

(c) What price should be charged to maximize revenue?

(d) What is the maximum revenue? Can we determine the corresponding profit?