Alg II: 4.1 Applications

Example 1: A record label uses the following function to model the sales of a new release:

a(t) = – 90t2 + 8100t

The number of albums sold is a function of time, t, in days. On which day were the most albums sold? What is the maximum number of albums sold on that day?

Example 2: The average height ***h*** in centimeters of a certain type of grain can be modeled by the function h(r) = 0.024r2  – 1.28r + 33.6, where ***r*** is the distance in centimeters between the rows in which the grain is planted. Based on this model, what is the minimum average height of the grain, and what is the row spacing that results in this height?

Example 3: The highway mileage ***m*** in miles per gallon for a compact car is approximately by m(s) = –0.025s2 + 2.45s – 30, where ***s*** is the speed in miles per hour. What is the maximum mileage for this compact car to the nearest tenth of a mile per gallon? What speed results in this mileage?

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