

Optimization Problems

p. 306 - 311 (4.6)

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Optimization means to maximize or minimize a quantity or situation.

To optimize, find the max or min and apply that amount to the particular situation.

** (FR) 1. A ball is thrown from the origin of a coordinate

system. The equation of its path is $y = mx - \frac{e^{2m}}{1000}x^2$,

where m is positive and represents the slope of the path of the ball at the origin. For what value of m will the ball strike the horizontal axis at the greatest distance from the origin? Justify your answer.

** (calc.) 2. If $y = 2x - 8$, what is the minimum value of the product xy ?