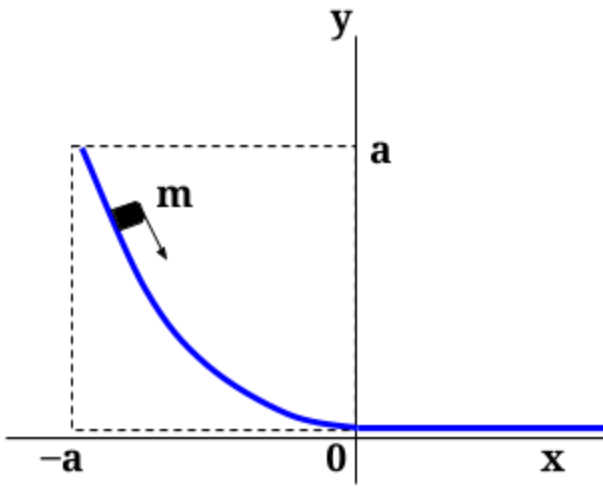
Homework Assignment 9 Name_____
due Friday, November 4

Cover sheet : Staple this page in front of your solutions, with answers where indicated.

[41] Problem 4.41 and Problem 4.43
(No answer required here.)

[41x] A mass m slides without friction in Earth's gravity down the track shown in the figure; the equation for the track is $y = x^2/a$ for $x < 0$ and $y = 0$ for $x > 0$. The initial point is $\{x,y\}=\{-a, a\}$ and the initial velocity is 0.
(A) Calculate y' when the height is y, in the form y' = f(y).
(B) Calculate the time when the mass passes the point {x,y}={0,0}.



Answer: The time in part (B) is

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[42] Problem 5.3.*
Answer: The parameter k is ...

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[43] Problem 5.5.*
Answer: Express C in terms of B_1 and B_2 ...

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[44] Problem 5.9.*
Answer: The period is ...

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[45] Problem 5.12.**
(No answer is required here.)

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[46] Problem 5.18.*** *Assume $a < l_0$. Show that {x,y}={0,0} is an unstable equilibrium, and explain why.*