Acceleration of Exit Button

The exit button will gravitate towards the cursor, such that it takes 1 second for the exit button to travel from one side of the form to the other. I want this to be something gravitational, so I’m going to use kinematic equations. The exit button will have a weight of 1 and the cursor will also have a weight of 1. I need to determine an appropriate value of k, such that, that will allow the button to reach a speed, such that it will travel from one side of the form to the other side **(500 pixels) in one second**. I’m using [this link](http://physics.stackexchange.com/questions/14700/the-time-that-2-masses-will-collide-due-to-newtonian-gravity) for reference.

To begin, we equate change in Kinetic energy to change in Potential Energy do to energy conservation.



Another equation that is used is the change in position with respect to time. Since the velocity of the objects represents the decreasing distance between the two objects:



Isolate for *p*:



and substitute the first equation into the second:



Plug in *M* = 1, *m* = 1, *r*0 = 500, and *T* = 1







Therefore, the acceleration of the x is 