

Movement with speed dependent friction problem

Source: <http://sci.tech-archive.net/Archive/sci.math/2007-04/msg00755.html>

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 - *Date:* 5 Apr 2007 18:45:42 -0700
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Not being a math guru I need a little help with what seem to you a simple problem

Here is description of my problem. An object is moving in a straight line. The object can thrust to speed up and thrust in reverse to slowdown.

The object is traveling between two known points, A & B, distance d apart.

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A d B

The basic movement is as follows

- Ft = thrust
- A = acceleration
- Vi = Initial velocity
- Vf = final velocity
- Cf = friction constant
- Ff = friction force
- F = force on object

so...

$$F_f = - V_i * C_f$$
$$F = F_t + F_f = F_t - V_i * C_f$$
$$A = F / \text{Mass}$$
$$V_f = V_i + A * \text{timeStep}$$

My question is :
If I know my initial velocity, distance left to go and final velocity,
how do I calculate the thrust ?

Thanks in advance,

Sam

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