Subject: Re: A math question.
Posted by Doitle on Wed, 02 May 2007 21:04:17 GMT
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Jerad Gray wrote on Tue, 01 May 2007 12:15Can anyone give me a formula for how I would calculate what angle an artillery would have to aim at if I knew: gravity, speed of the projectile, distance away the object is from the artillery, height of the object compared to the artillery, and 0 air resistance. This is also for a program, or game more likely *cough*new AI for Renhalo*cough*.

Here you go.

R = d + v*cos(theta)*(v*sin(theta)+SqRt(v^2*.5*(1-cos(2theta))-(2*A*(0-h)))/A)

I'm pretty sure that's the Master Projectile Equation I derived back in Highscool. I still had the prgoram I made for the TI that ran the equation. Basically here's the breakdown. V = your muzzle velocity. Theta is the angle off the horizontal. A is your accelleration constant (e.g. g=9.81m/s^2) H is your initial height. D is your initial X displacement. (How far back from the edge of the cliff you are.

Hope that helps. If you can't make sense of it I'll go put it into math type to make it look a bit prettier.