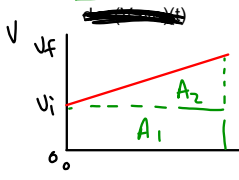


Kinematic Equation #2 Proof (Areas Method)

Prove that $d = v_i t + \frac{1}{2} a t^2$

Start with



$d = \text{area 1} + \text{area 2}$
 $d = bh + \frac{1}{2}bh$
 $d = t v_i + \frac{1}{2} t (v_f - v_i)$
 $d = v_i t + \frac{1}{2} t (at)$
 $d = v_i t + \frac{1}{2} a t^2$

$v_f = v_i + at$
 $v_f - v_i = at$

Feb 21-1:38 PM