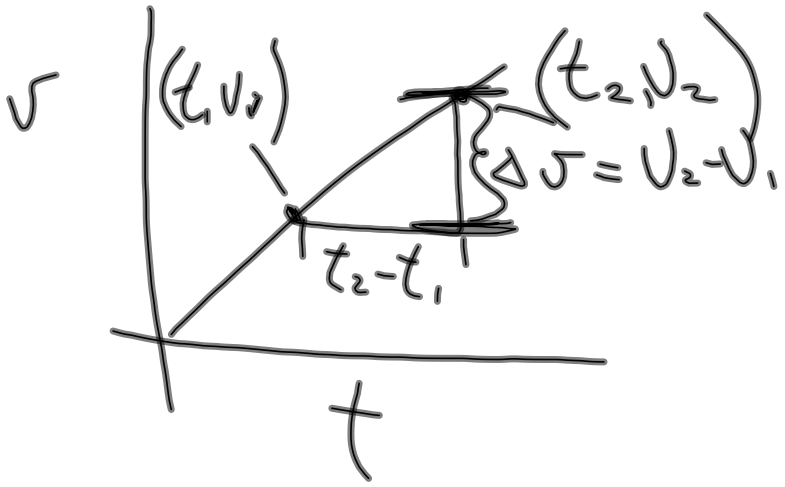
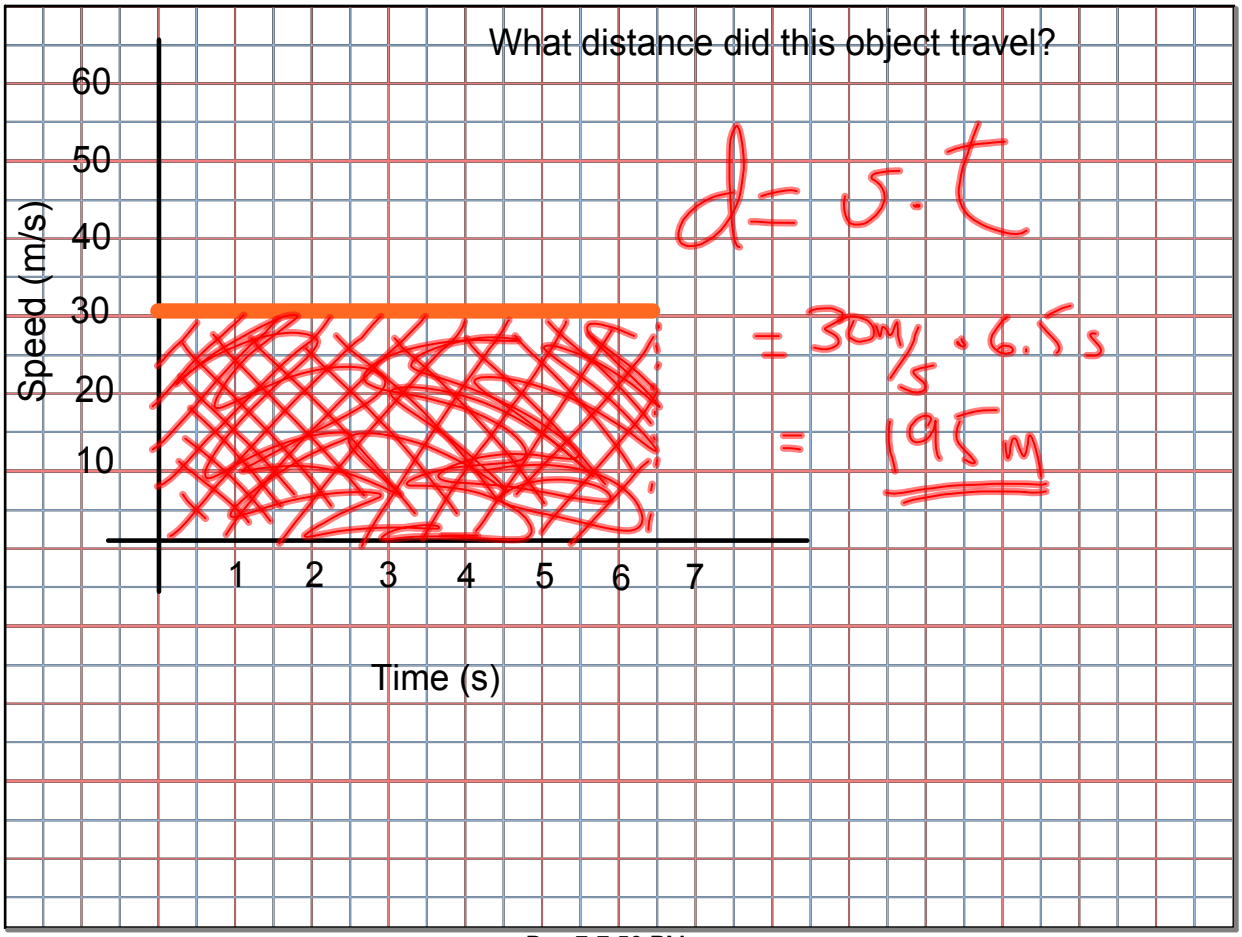
Speed-Time Graphs

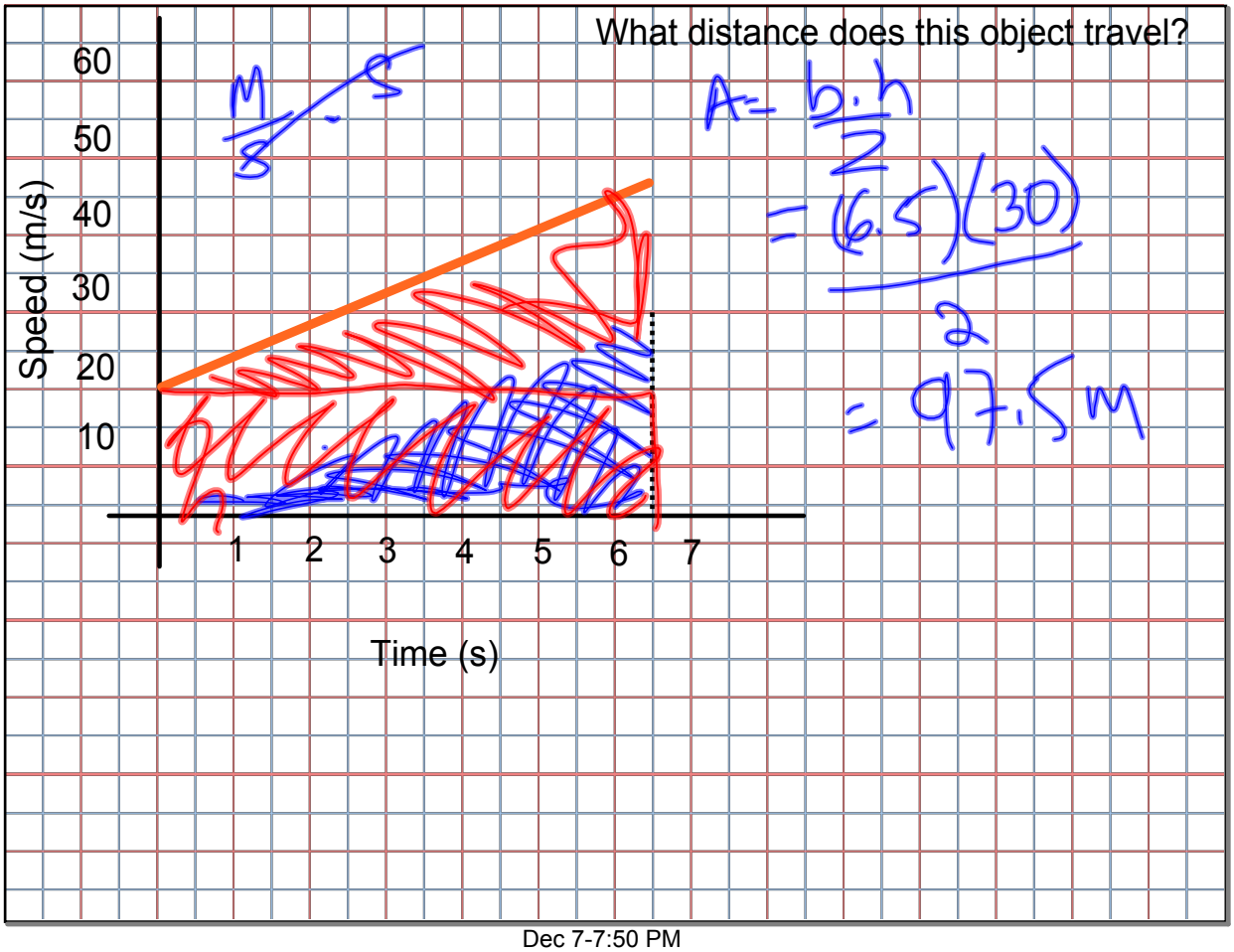
-slope of a speed-time graph gives us acceleration
-what is the *area* under the speed time graph represent?



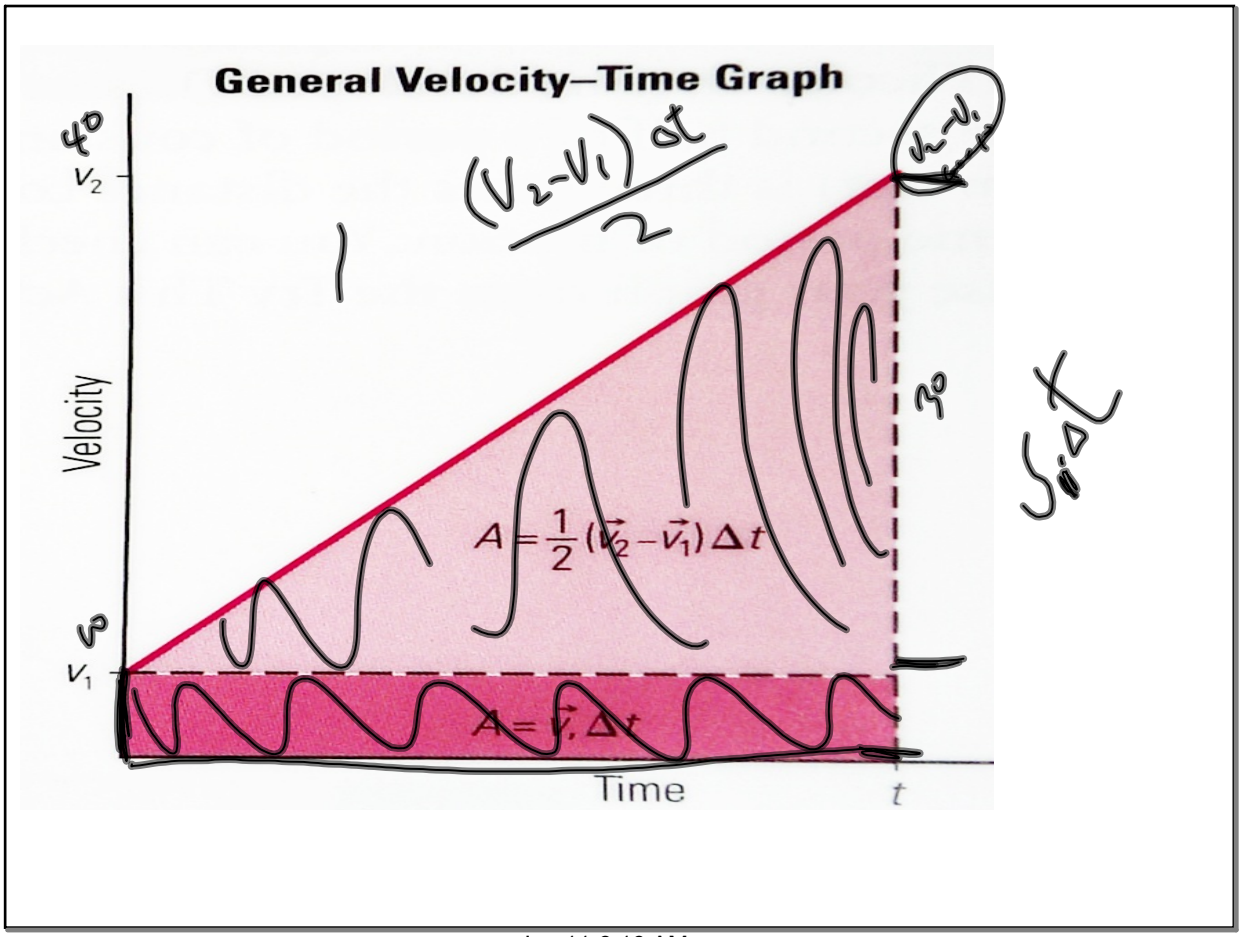
Nov 2 - 7:47 PM



Dec 7-7:50 PM



Dec 7-7:50 PM



Jan 11-8:16 AM

$$\Delta\vec{d} = \text{(area of rectangle)} + \text{(area of triangle)}$$

$$= \vec{v}_1\Delta t + \frac{1}{2}(\vec{v}_2 - \vec{v}_1)\Delta t$$

since $\vec{a} = \dfrac{\vec{v}_2 - \vec{v}_1}{\Delta t}$, therefore $\vec{v}_2 - \vec{v}_1 = \vec{a}\Delta t$

$$\Delta\vec{d} = \vec{v}_1\Delta t + \frac{1}{2}(\vec{a}\Delta t)\Delta t$$

$$\Delta\vec{d} = \vec{v}_1\Delta t + \frac{1}{2}\vec{a}(\Delta t)^2$$

Jan 11-8:17 AM

Jan 11-8:55 AM