Usage of Equations of uniform acceleration

Put on board

Choices

A (2.13) $\vec{v}_f = \vec{v}_i + \vec{a}t$

B (2.14) $\vec{v}_{avg} = \frac{\vec{v}_i + \vec{v}_f}{2}$

C (2.15) $x_f = x_i + \frac{1}{2}(v_i + v_f)t$

D (2.16) $\vec{x}(t) = \vec{x}_0 + \vec{v}_0 t + \frac{1}{2}\vec{a}t^2$

E (2.17) $v_{xf}^2 = v_{xi}^2 + 2a(x_f - x_i)$

Word Problems

Ex 1) A car passes $x = 10\,m$ at $t = 0$ going $10\,m/s$ but accelerating at $4\,m/s^2 \uparrow$. Where will it be in 5 seconds?

Which eqn? 2.16

v_i or v_0
x_i or x_0
x_f, t or t_f
Find v_f

Ex 2) A car accelerates uniformly, starting at $v_i = 5\,m/s$ at $x_i = 20\,m$ and reaching $x_2 = 100$ only 5 seconds later. How fast did it cross the $x_2 = 100$ mark?

Which eqn? 2.15 or use $v_{avg} = \frac{\Delta x}{\Delta t}$ & (2.14)

Ex 3) A rock thrown down a well @ $10\,m/s$ reaches the bottom at $40\,m/s$. What was its average velocity? Eqn? 2.14