Physics name _____ period ____

Inv-1 Expan III The Birth of the Orange Equations sheet #____

The Three Basic Foundation Equations:

1.) What is the symbol for position? _____ What is the symbol for displacement? _____

2.) Write the equation for average velocity involving total displacement and total time.

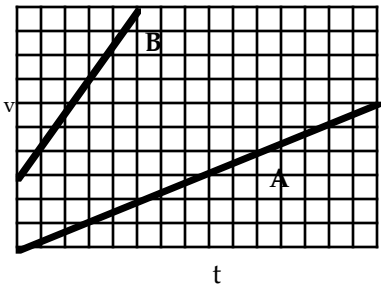
3.) Write the equation for average velocity involving initial velocity (v_o) final velocity (v_f).

4.) Write the equation for acceleration involving final velocity, initial velocity and time:

Orange Kinematic Equations :

5a.) Write the equation for line A in terms of $\mathbf{v_{fx}}$, $\mathbf{a_x}$ and $\mathbf{t}$

5b.) Write the equation for line B in terms of $\mathbf{v_{fx}}$, $\mathbf{v_{ox}}$, $\mathbf{a_x}$, and $\mathbf{t}$



This is the FIRST orange equation

6.) Use the equations above to derive an equation for $\mathbf{\Delta x}$ using the variables $\mathbf{v_{ox}}$, $\mathbf{a_x}$, and $\mathbf{t}$.

SHOW EACH INDIVIDUAL SIMPLE STEP, DO NOT COMBINE OPERATIONS IN A SINGLE STEP.

	Equation	Reason (introduce, substitute, isolate)
step #1: _____	= _____	_____
step #2: _____	= _____	_____
step #3: _____	= _____	_____
step #4: _____	= _____	_____
step #5: _____	= _____	_____
step #6: _____	= _____	_____
step #7: _____	= _____	_____
step #8: _____	= _____	_____
step #9: _____	= _____	_____

This the SECOND orange equation ====>

7.) Use the equations above to derive an equation for $\mathbf{v_{fx}}$ using the variables $\mathbf{v_{ox}}$, $\mathbf{a_x}$, and $\mathbf{\Delta x}$.
SHOW EACH INDIVIDUAL SIMPLE STEP, DO NOT COMBINE OPERATIONS IN A SINGLE STEP.

	Equation	Reason
step #1:	_____ = _____	_____
step #2:	_____ = _____	_____
step #3:	_____ = _____	_____
step #4:	_____ = _____	_____
step #5:	_____ = _____	_____
step #6:	_____ = _____	_____
step #7:	_____ = _____	_____
step #8:	_____ = _____	_____
step #9:	_____ = _____	_____
step #10:	_____ = _____	_____

This the THIRD orange equation ====>