Momentum - Physics 12 - Unit 2 Cheat Sheet

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Formulas

$p=mv$

$\Delta p=m\Delta v=F_{net}\Delta t$

$\Sigma p_i=\Sigma p_f$

To Remember

Coordinate System needed

Draw it out if you need it

Remember you have to do x and y comp

List out all the values on the side write them all out - label angles too

i.e. m_A=5.0kg | v_{Aix}=4.0m/s | v_{Afx}=2.0m/s cos 30° | v_{Afy}=2.0m/s sin 30° | m_B=7.0kg | m_B=0m/s | v_{Bf}=?

When dealing with inelastic/stick together objects, remember they are one thing - **combined**

Key Concepts

A **state** is a possible configuration that a system can exist in accordance with the laws of physics.

Phase space contains all the configuration.

Deterministic is when you know where you came from (the past) and where you are going next (the future) if you know where you are at the present.

Momentum - p - unit - kg • m/s

Impulse - Δp = change in momentum

Collisions

Elastic Collisions	p and E_k are **conserved** - perfectly bounce off of each other
	$\Sigma p_i=\Sigma p_f$ and $\Sigma E_{ki} = \Sigma E_{kf}$
	unrealistic irl - nothing is lost thru sound/heat/etc.
Inelastic Collisions	p is **conserved**, E_k isn't - stick together
	$\Sigma p_i=\Sigma p_f$ and $\Sigma E_{ki} \neq \Sigma E_{kf}$
Explosion	explodes into multiple pieces
	$\Sigma p_i=\Sigma p_f$ and $\Sigma E_{ki} \neq \Sigma E_{kf}$

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