Summary of Special Relativity

You may add your own notes to both sides of this page and bring it with you to the final exam.

Time dilation	A moving clock ticks slowly.	$T = \dfrac{T_0}{\sqrt{1-(V/c)^2}}$

T_0 is the time ticked off by a single moving clock (which is also the time elapsed in that clock's own frame).
T is the (longer) time elapsed in the frame in which that clock moves at speed V.

Length contraction	A moving rod is short.	$L = L_0\sqrt{1-(V/c)^2}$

L_0 is the length of a rod in that rod's own frame (its "rest length").
L is the (shorter) length of that rod in the frame in which that rod moves at speed V.

Relativity of synchronization	A moving pair of clocks isn't synchronized.	Rear clock set ahead by $L_0 V/c^2$.
Also called: Relativity of simultaneity	If two events are simultaneous in one frame, then in another frame the rear event happens first.	

If a pair of clocks is synchronized in that pair's own frame, then in the frame in which they both move at speed V, the rear (trailing) clock is set ahead by $L_0 V/c^2$.