## Experiment 3: Collisions

## Part 3B- Linear Collisions Between Two Objects

Name			Partner Da		ite				
Sonic Ranger 1 Calibration (Gain ar			and Offset):	Sonic Ranger 2 Calibration (		(Gain and Offset):			
Glider col	liding with a	a stationary	glider using a spri	ing					
Trial	Mass 1         Mass 2 $m_1$ $m_2$		Initial Momentum $p_i$		Final Momentum $p_f$	Change in Momentum $\Delta p = p_f - p_i$			
	(kg)	(kg)	(kg m/s)		(kg m/s)	(kg m/s)			
1									
2									
IIIdi	$K_i$		Final Kinetic Energy $K_f$		$\Delta K = K_f - K_i$				
	(L)		(L)		(L)				
1									
2									
Glider col	liding with (	and sticking	to) a stationary g	glider u	using velcro				
Trial	Mass 1	Mass 2	Initial Momentun	n	Final Momentum	Change in Momentum			
	$m_1$	$m_2$	$p_i$		$p_f$	$\Delta p = p_f - p_i$			
	(kg)	(kg)	(kg m/s)		(kg m/s)	(kg m/s)			
1									
Trial	Initial Kin	etic Energy	Final Kinetic Ener	rgv	Change in Kinetic Energy	_			
	(J)		K <sub>f</sub>	'01	$\Delta K = K_f - K_i$				
			(L)		(L)				
1									

## Experiment 3: Collisions

Name			Partner		Date					
What was the ratio of the final to initial kinetic energy $(K_f / K_i)$ ?										
How did this result compare to the value that is predicted for a completely inelastic collision with a stationary target (as in your prelab question)?										
Glider colliding with a stationary glider using rubber bumper										
Trial	Mass 1	Mass 2	Initial Momentum	Final Momentum	Change in Momentum					
	$m_1$	$m_2$	$p_i$	$p_f$	$\Delta p = p_f - p_i$					
	(Kg)	(Kg)	(kg m/s)	(kg m/s)	(kg m/s)					
1										
Trial	Trial Initial Kinetic Energy K <sub>i</sub> (J)		Final Kinetic Energy K <sub>f</sub>	Change in Kinetic En $\Delta K = K_f - K_i$	ergy					
			(L)	(L)						
1										
Write a paragraph that summarizes your important results										

64