




Free Body Diagram (FBD) Lecture Worksheet

Fill in the forces in the figures below. Make sure to label forces properly and draw vectors in proper direction. Assume the cyclist is pressing down with his right foot on the pedal and the bicycle is accelerating to the right. Also assume that aerodynamic drag can be neglected.

					
FBD of Cyclist on Bicycle		FBD of Cyclist		FBD of Bicycle	
F_{gC}	Cyclist gravity force	P	Pedal Force Right Foot		
F_{gB}	Bicycle gravity force	S_x	Seat Force – X		
T_1	Traction force	S_y	Seat Force – Y		
N_1	Normal force at rear wheel	H_x	Handlebar Force – X		
N_2	Normal force at front wheel	H_y	Handlebar Force - Y		