1. A skier lands on one leg with the ski flat on the slope as given in the sketch below (a); the landing ski is pointing straight ahead. Calculate the force $F_{ACL}$ produced by the quadriceps if exerting $F_q = 5000$ N (b). Does the skier have a chance to take off load from the ACL without changing body configuration? If yes, how? How and why would the loading situation for the ACL change if the landing ski would be pointing inwards (medially) or outwards (laterally)? How can ACL injuries of such kind be prevented? List and briefly explain three different possibilities.

a) 

b)