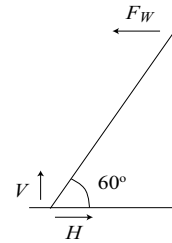


6. A uniform ladder of length 6 m and mass 75 kg leans precariously in equilibrium against a wall. The force F_W of the wall on the ladder is horizontal. Let H denote the horizontal component of the floor's force on the ladder, and let V denote the vertical component. These two components satisfy the equation $H = \mu_s V$, where μ_s is the coefficient of static friction. What is the value of μ_s ?



- (1) 0.29 (2) 0.17 (3) 0.38 (4) 0.47 (5) 0.56
7. The crankshaft of an auto is initially rotating at 3000 rpm. The rotation of the crankshaft begins to decrease at a constant rate, and it stops rotating 15 s later. What is the magnitude of the angular acceleration of the crankshaft, in rad/s^2 ?
- (1) 21 (2) 5 (3) 36 (4) 12 (5) 43
8. The radius of an auto's tires is 0.5 m. The tires rotate without slipping. The auto starts from rest and accelerates uniformly to 30 m/s in 6 s. The auto then decelerates uniformly for 10 s and comes to rest. Through what angle do the auto's tires rotate during the 16 s time interval?
- (1) 480 rad (2) 240 rad (3) 120 rad (4) 960 rad (5) 60 rad