

Special Problem 2: Jean Valjean's Feat

This problem is inspired by Victor Hugo's novel, *Les Misérables*.

Jean Valjean, the original 'Fugitive', was able at a crucial juncture to elude his pursuers by climbing up the corner formed by the intersection of two perpendicular vertical walls. The coefficient of static friction between J.V.'s limbs and the walls is μ .

- a. What is the minimum force he must exert on the walls, to keep from falling? (8)
- b. What is the minimum value of μ for which it's possible at all? (2)

Hint: The walls exert both constraint (normal) and frictional (tangential) forces. By positioning his limbs, J.V. can control the angle of the frictional forces relative to vertical.