Question#18421

A file cabinet weighing 1500 N is at rest on the floor. The coefficient of static friction between the floor and the cabinet is 0.5. What is the minimum force required to make the file cabinet move horizontally

Solution:

According to the First Newton's Law, the minimum force is equal to the static friction force:

$$F_{min} = F_{fricton} = kN,$$
$$were\ k - coeficient\ of\ static\ friction, N - nofmal\ force\ equal\ to\ the\ weight$$

$$F_{min} = 0.5 * 1500 = 750\ N$$

Answer: 750 N