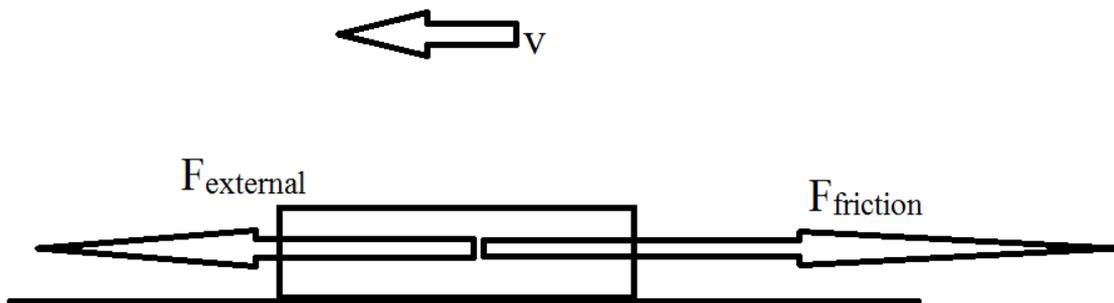


Does something, for example a tire or a shoe, wear out faster due to more friction on the road or will it wear out faster due to less friction? will a rougher surface wear out another more, or is it the slipperiness of the 2 surfaces that require more grip, hence wearing out each other more?

**Answer:**

It is obviously that a tire wears out when wheelspin occurs or during the rapid slowing down when wheels slides along the road. Same about the shoes, it wears out when slides.



Second Newton law:

$$F_{\text{total}} = m * a = F_{\text{external}} - F_{\text{friction}}$$

According to the Newton's laws of motion slides occurs when external force applied to the shoe or the tire is greater or equal to friction force. So if it will be more friction on the road, friction force will be greater and sliding will occurs less frequently and the shoe or the tire will wear out slower.