

Comparing the first and the second Newton's law of motion. (2.07-2.08)

the law of motion	force (s) acting on a body	motion of the body (an effect on the motion of the body)	system connected to the body - examples
<i>the first</i>	no force /balanced forces	I. no motion II. steady motion (velocity is constant)	inertial I. a train in a rest II. steady linear motion
the second	one force/ resultant force	I. accelerated II. decelerated III. with a changing direction $F = m a$	non-inertial I. an accelerated car II. a breaking bus III. a satellite orbiting the Earth

Searching resultant vectors (2.11 More about vectors)

Two vectors (two forces) we can replace by a single vectors (a force) with the same effect		
Size of the resultant force	$R = T - F = 1000N - 600N = 400N$	$R = F - T = 500N - 300N = 200N$
Direction of the resultant force	the same d. as the direction of the motion	opposite d. to the direction of the motion
Effect	the motion is accelerated	the motion is decelerated

