Practice For Proficiency
Newtons Laws

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*Note: These are concepts that can be understood and even with out a ton of practice can be understood as long as the memory remains in your brain. Calculations however need are like a pencil... They need to be constantly practiced to remain sharp.

So how might we see these concepts on AP exams... Typically they are MC questions with a scenario that needs to pick the best explanation.

Here are a few very common scenarios.

#1: You are in a car with out a seatbelt on and your car hits the car in front of you. You then propel forward hitting your face on the windshield.

What force caused you to propel forward?

No Force - an object in motion remains in motion until it is acted on by an equal and opposite force.

#2***: A bug hits your windshield. The bug is smashed to smithereens!***

Student statement: The bug received a larger force then the car because the car is traveling faster and has more mass. Justify or nullify this statement.

Nullify- Every force has an equal and opposite force.

#3***: A constant force is being applied to a grocery cart of mass M (ignore friction). A large bag of dog food with mass M is dropped in the cart.***

Student statement: The cart will be moving at a constant speed due to the constant force; the addition of the dog food will cause the speed of the cart to reduce in half.

Justify or nullify:

1) a single force means there is a Net force. and therefore a Net acceleration. So the speed will Not be constant but will be getting faster.

#2) yes. It will Not accelerate as fast but it will accelerate.