**Noteguide for Newton's Laws - Videos 4A, 4B Name**

Write down the laws:

1

2

3

F = ma

Example: What force causes a 4.0 kg object to accelerate at 6.0 m/s/s?

(Write down as well the base units of a Newton)

Example: A 2.1 kg hammer accelerates from rest under the influence of a net force of 120 N. What is its final velocity if the force is exerted over a distance of 78 cm

(Whiteboards on the back)

Try these example problems. Don't freak out if you can't immediately get the answer. We will work on these as a group in class. They are solved in the linked videos that follow the main one

|  |  |
| --- | --- |
| 1. What unbalanced force causes a 892 g object to accelerate at -9.81 m/s/s? (-8.75 N) | 2. What is the acceleration of a 12 kg object if you exert 37 N of unbalanced force on it? (3.1 m/s/s) |
| 3. What is the mass of an object if when there is a 128 N net force acting on it, it accelerates at  3.7 ms-2? (35 kg) | 4. A 16 kg object going 23 ms-1 is stopped by a force in 0.125 s. What force? (-2944 N) |
| 5. A 3.84 kg object going 42.0 ms-1 experiences a force of -23.5 N for 2.60 s. What is the final velocity of the object? (26.1 m/s) | 6. A 143 gram baseball going 39 m/s caught by the catcher. In stopping, the baseball travels 7.5 cm. What is the average force exerted on the ball?  (-1450 N) |