

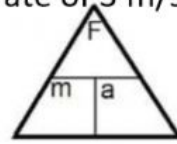
# Newton's Second Law

If your answer is not a whole number round to 2 decimals. No commas in the answer.

1. How much force is needed to accelerate a 1000-kg car at a rate of 3 m/s<sup>2</sup>?

answer Units

N kg m/s<sup>2</sup>

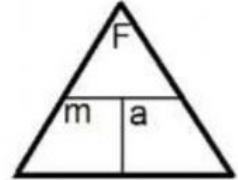


2. If a 70-kg swimmer pushes of a pool wall with a force of 250 N, at what rate will the swimmer accelerate from the wall?

answer Units

N kg m/s<sup>2</sup>

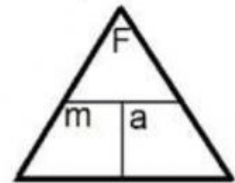
round to 2 decimals



3. A weightlifter raises a 200-kg barbell with an acceleration of 3 m/s<sup>2</sup>. How much force does the weightlifter use to raise the barbell.

answer Units

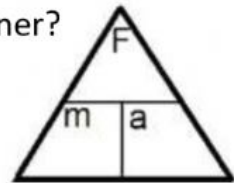
N kg m/s<sup>2</sup>



4. A dancer lifts his partner above his head with an acceleration of 2.5 m/s<sup>2</sup>. The dancer exerts a force of 200 N. What is the mass of the partner?

answer Units

N kg m/s<sup>2</sup>



5. Newton's second law of motion states that a(n) **balanced unbalanced** force acting on an object causes it to accelerate according to the formula net force = mass x **distance acceleration**. Which means the acceleration of the object is directly proportional to the **speed force** and inversely (oppositely) proportional to the mass.

6. The two factors that affect acceleration are: **mass speed distance force weight**

7. Friction:

- is \_\_\_\_\_ when an object is not moving.
- is \_\_\_\_\_ when two objects rub against each other.
  - \_\_\_\_\_ friction a special type of sliding friction when the object slides through a liquid or gas
- is \_\_\_\_\_ when the object rolls over another.