Forces Review

FBD Practice

1. A ball sits on a desk
2. A ball is dropped from your hand
3. A ball is thrown up in the air
4. A ball rolls off a desk onto the ground
5. A ball rolls across a desk with friction and slows down
6. A ball rolls up a ramp with friction
7. A ball rolls down a ramp
8. A ball is thrown down off a building

Is the net force zero or nonzero in the x and the y?

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Forces Practice

1. A person drops a ball off a balcony. There is air resistance. Draw a FBD with tick marks and determine whether the net force is zero or nonzero and explain why.
2. A person pushes a ball across a desk at a constant velocity. Draw a FBD with tick marks and determine whether the net force is zero or nonzero and explain why.
3. A ball is thrown downwards. There is air resistance. Create a FBD and determine net force in the x and y.
4. A ball rolls across the ground and rolls to a stop. Create a FBD and determine net force in the x and y.

Newton’s 2nd Law F=ma

A 1500 kg car is stopped at a red light. When the light turns green, the engine supplies 5000 N of force to the wheels. What is the car's acceleration?

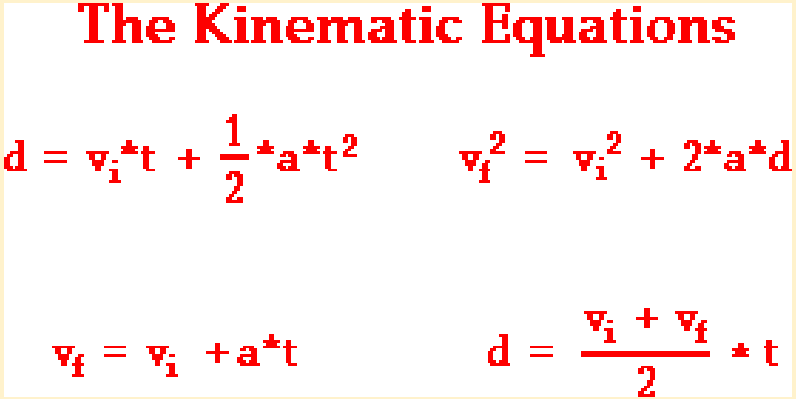
Newton’s 2nd Law F=ma

Find the mass of a go cart if it uses 390 N of force and accelerates at 2 m/s^2

The same go cart now starts from rest and goes 5 m in 5 seconds. What is the acceleration of the go cart? Force?

Newton’s 2nd Law F=ma

A 1000 kg car starts from rest and accelerates for 10 seconds over 200 m. What is the force of the car after the 200m?



Motion and Forces Practice

A 45 kg person is running at 4 m/s and slows down to a stop in 20 m. What is the acceleration of the person? The force needed to stop?