

Frames of Reference

A frame of reference is:

The earth's frame of reference is _____

How can you tell if you are moving or not?

All motion is _____.

When it comes to motion, our minds tend to think of as one thing one thing moving and the other thing as _____.

All frames of reference moving at a constant velocity relative to each other are _____.

When you drop a ball inside a car moving at a constant speed in a straight line, its path is _____ down relative to someone in the car.

When you drop a ball inside a car moving at a constant speed in a straight line, the path of the ball is _____ downwards relative to someone in the earth's frame of reference.

Suppose you are playing catch tossing a ball with speed v on a train flatbed car at rest relative to the tracks. If the train moves at speed u relative to the tracks, the speed of the ball relative to the earth is:

Suppose you drop an orange from atop a mast of a boat sailing at a constant velocity of 10 mph. Where does the orange land—in front of the mast, next to the mast, or behind the mast? _____

Suppose a sudden gust of wind causes the boat to accelerate? Where does the orange land—in front of the mast, next to the mast, or behind the mast?

Fictitious forces arise in frames of reference that are (acceleration, not accelerating).

Centrifugal force is an apparent reality for someone in an _____ frame of reference.

A pendulum designed to detect the rotation of the earth is called a _____ pendulum.