

Your assignment is to watch videos from the website FLIPPING PHYSICS.  
and to then answer some questions about the videos.  
AND, to answer some questions that mimic the questions asked in the videos.  
Also, answer slightly different versions of the questions that were asked in the video. This  
is to practice the methods used in the video.

The URLs are given on this document

**Introduction to Velocity and Speed and the differences between the two:**

<https://www.flippingphysics.com/introduction-to-velocity-and-speed.html>

What is the formula for velocity:

True or false: velocity has direction.

Why does Mr. P bang his head on the board?

Write the equation for speed:

Instead of using displacement, like velocity, speed uses \_\_\_\_\_.

True or false: speed has direction.

True or false: velocity = speed

When do average speed and average velocity have the same magnitude?

**Understanding and Walking Position as a Function of Time Graphs**

<https://www.flippingphysics.com/understanding-and-walking-graphs-of-position-as-a-function-of-time.html>

What is the symbol for slope? What is the formula for slope?

Is  $y = mx + b$  the equation for slope?

What is formula for the slope of a position-time graph, and what physics quantity does it equal?

Copy this sentence:

“The slope of a position versus time graph is the velocity.”

In the example given,

what is the origin (position = 0)

Which direction gives *negative position*? Which direction gives *positive position*?

If the graph is diagonal, does this mean you move diagonally?

If the position-time graph is horizontal, what does the person do?

If the slope of the line is negative, which way is the person moving?

What mistake did Mr. P’s daughter make when trying to walk a position-time graph?

### 5. Introduction to Uniformly Accelerated Motion: A Braking Bicycle

<https://www.flippingphysics.com/introductory-uniformly-accelerated-motion-problem.html>

#### Original Problem:

Mr. P is riding his bike at 22.9 km/hr when he applies the brakes causing his bike to slow down with a constant acceleration. After 1.01 seconds he has traveled 4.00 meters.

A) What was his acceleration and

B) What was his final speed?

Are you able to use the Uniformly Accelerated Motion equations (which I called the *kinematic equations*)? Why?

Why can't you just plug the numbers given into the equation?

At the end, why did you find final speed and not final velocity?

#### New Problem #1: [I took the conversion out!]

Mr. P is riding his bike at 4.50 m/s when he applies the brakes causing his bike to slow down with a constant acceleration. After 3.01 seconds he has traveled 6.00 meters.

A) What was his acceleration and

B) What was his final speed?

#### New Problem #2: [I took the conversion out!]

Mr. P is riding his bike at 7.50 m/s when he applies the brakes causing his bike to slow down with a constant acceleration. After 2.01 seconds he has traveled 5.50 meters.

A) What was his acceleration and

B) What was his final speed?