

## Unit 2D Graphing Motion

### Note-Taking Guide and Questions to Consider **TEACHER**

#### Main Ideas, Key Points, Questions:

After watching the video segment, write down key points, main ideas, and big questions.

#### Objective(s):

- Analyze and interpret motion graphs to determine the relationships between an object's position, velocity, and acceleration.
- Understand what the slope of a position vs. time graph and a velocity vs. time graph represent.
- Create velocity vs. time and acceleration vs. time graphs from a position vs. time graph.

#### Notes:

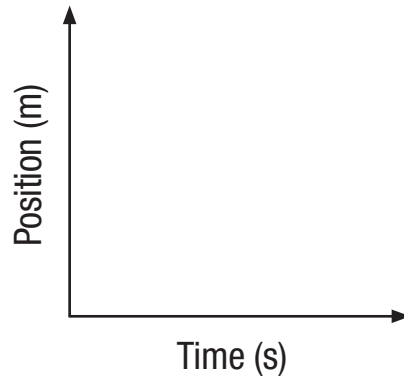
During the video segment, use words, phrases, or drawings to take notes.

#### Summary:

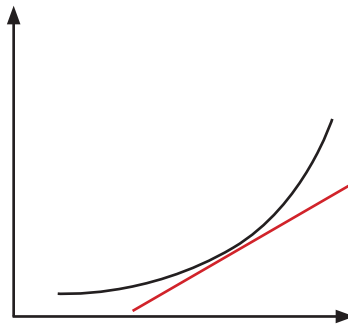
After watching the video segment, write at least three sentences explaining what you learned. You may ask yourself: "If I was going to explain this to someone else, what would I say?"

Answer the following.

1. Label the axes below for a position versus time graph:



2. On the curve below, draw a tangent line on the graph at the middle of the curve:



3. What does the slope of the tangent line on a position versus time graph represent?

*instantaneous velocity*

4. How do you find the average velocity using a position versus time graph?

*Find the slope of the graph by subtracting the initial position from the final position and dividing this value by the time that the object was in motion.*

5. What kind of motion does a horizontal line on a position versus time graph represent?

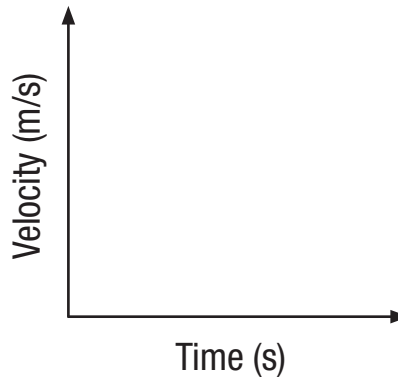
*The object is at rest.*

6. What is the object doing if the line on a position versus time graph is curved?

*accelerating*

Answer the following.

7. Label the axes below for a velocity versus time graph:



8. What does the sign of a velocity versus time graph represent?

*the object's direction of motion*

9. What does the slope of a velocity versus time graph represent?

*acceleration*

10. Label the axes below for an acceleration versus time graph:

