

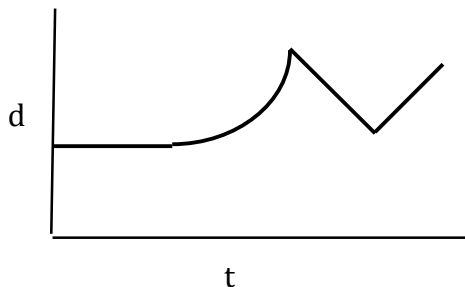
AP PHYSICS 1 Summer Assignment

Part I: Motion Graphs Packet - Guided Reading

Name: _____

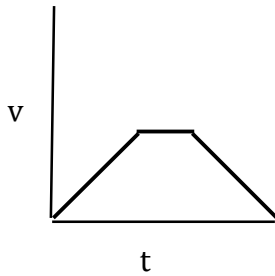
(Go to website: mrdorick.weebly.com, click on the AP Physics 1 Page, download and read through the Motion Graphs Packet and answer the questions below. Page numbers are given as a reference.)

1. How are the axes labeled on a distance-time graph? (pg 1)
2. What does a horizontal line on a distance-time graph indicate? (pg 1)
3. How can you tell if an object is moving at a constant speed? (pg 2)
4. On the 2nd graph on page 2:
 - a. Which line shows a higher speed, dotted or solid?
 - b. Are both lines showing constant speeds?
5. A curved line on a distance-time graph indicates what? (pg 2)
6. Use the info given in the graph on pg 3 to describe the 4 parts of this graph:



7. Use the graphs on pg 4 to determine which one shows that one runner started 10 yards further ahead of the other. Explain your answer.
8. Use the graphs on pg 5 to determine which one shows both runners moving at the same speed? Explain your answer.
9. Match the descriptions to the distance-time graphs given on pg 6. **Explain your answers.**
 - a. Graph A matches description _____ because _____.
 - b. Graph B matches description _____ because _____.
 - c. Graph C matches description _____ because _____.
 - d. Graph D matches description _____ because _____.
10. Does a straight line on a speed-time graph correspond to a stationary object? Why or why not? (pg 7)
11. How can you show with a speed-time graph:
 - a. An object that is speeding up?
 - b. An object that is slowing down?
12. Why does the dashed line have a greater acceleration? (pg 8)

13. Use the information on the graph (pg 8) to describe the following speed-time graph:



14. Match the descriptions to the speed–time graphs given on pg 9. **Explain your answers.**

- Graph E matches description _____ because _____.
- Graph F matches description _____ because _____.
- Graph G matches description _____ because _____.
- Graph H matches description _____ because _____.

For questions 15-19, look at the graph on pg 10 of three people running a 100-meter race.

- Which runner won the race? Explain your answer.
- Which runner stopped for a rest? Explain your answer.
- How long was the stop? Explain your answer.
- How long did Bob take to complete the race? Explain your answer.
- Calculate Albert's average speed. (Figure the distance and the time first!)

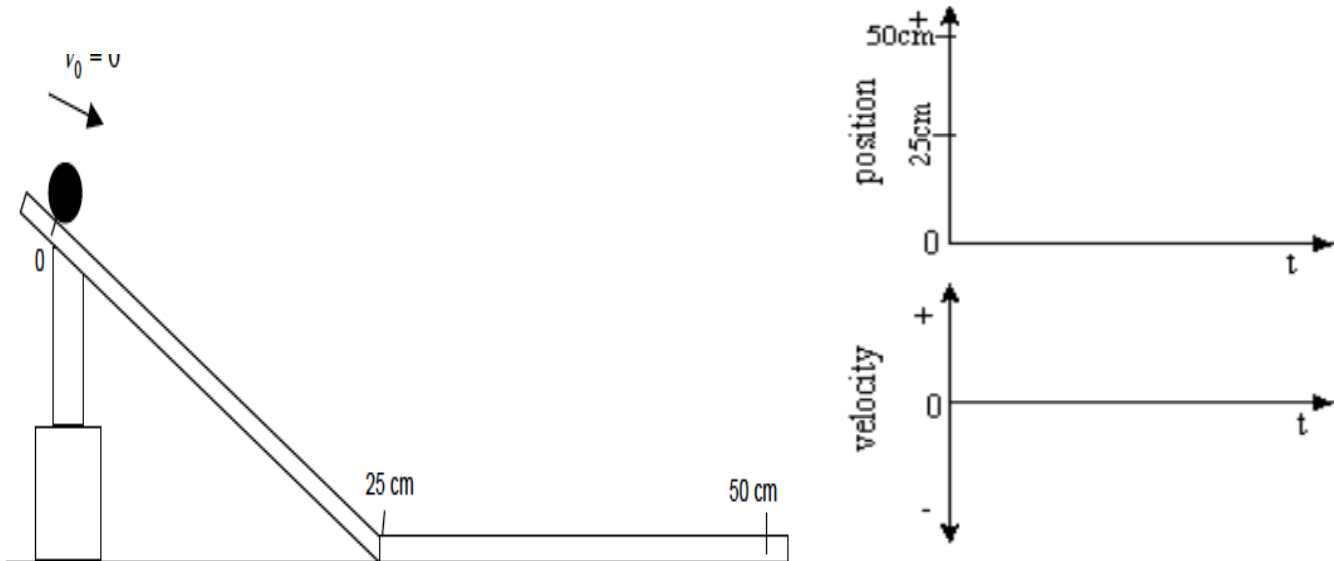
For questions 20-24, look at the graph on pg 11 of a bus changing speeds during a trip.
Choose the correct words from the list on pg 11 to describe the motion during each segment.

- Segment 0-A** The bus is _____. Its speed changes from 0 to 10 m/s in 5 seconds.
- Segment A-B** The bus is moving at a _____ of 10 m/s for 5 seconds.
- Segment B-C** The bus is _____. It is slowing down from 10 m/s to rest in 3 seconds.
- Segment C-D** The bus is _____. It has stopped.
- Segment D-E** The bus is _____. It is gradually increasing in speed.

Part II: Consider the diagram below. Assume the ball is released from rest and rolls down the incline. Also, assume that the ball experiences no change in velocity while rolling along the horizontal part of the ramp (25-50 cm).

Complete the following:

- Draw a motion map of the movement of the ball on the diagram below, use 6 arrows. For help drawing motion maps, use the [Reading Motion Maps](#) file on the AP Physics 1 page of mrdorick.weebly.com.
- Complete the position vs. time and velocity vs. time graphs on the blank graphs provided below
- Write a description of the motion of the ball from the 0 cm mark to the 50 cm mark.



Part III: Getting to know the AP Physics Exam

- Go to: mrdorick.weebly.com, select the AP Physics 1 page. Click on the link "AP Physics 1 course description" to download the pdf (AP Physics 2 is also included in the pdf)
- Read pg 5-7, 13-14 on the description of the course and the course objectives
- Read pg 117-123 on the 7 scientific practices. Summarize each in 1-2 sentences.
- Read pg 147-151 on the exam format. Pay special attention to the meaning of specific words.
- Read pg 223-226, then print out the following tables:
 - "ADVANCED PLACEMENT PHYSICS 1 TABLE OF INFORMATION, EFFECTIVE 2015"
 - "ADVANCED PLACEMENT PHYSICS 1 EQUATIONS, EFFECTIVE 2015"