

I. Be very familiar with these terms:

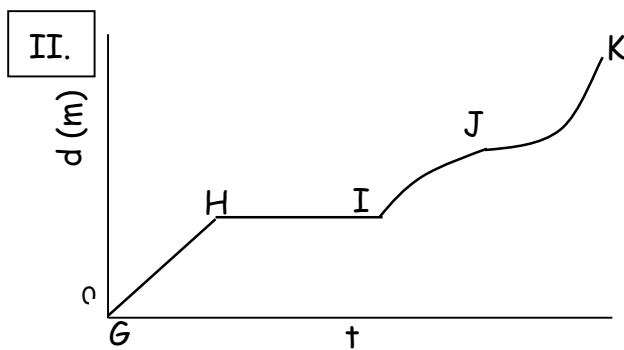
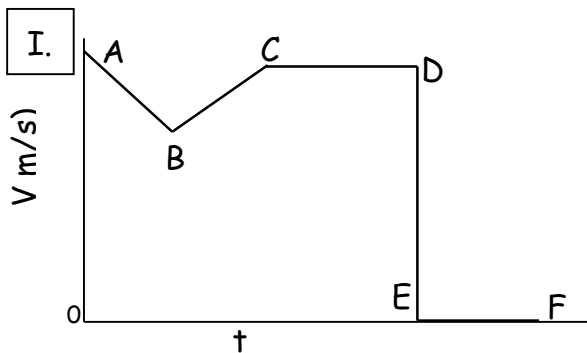
displacement	speed	relative velocity
distance	velocity	frame of reference
motion, uniform motion	acceleration	a, v_i, v_f, d, t, g

II. Short Answer or Fill in the Blank:

1. A car driving in a circle at 40 mi/h does not change (speed, velocity) but does change (speed, velocity).
2. The rate of change in velocity is _____.
3. Acceleration due to gravity, represented by the letter _____ is about _____ in most of the USA.
4. If an object has uniform velocity, its acceleration = _____.
5. true or false? If an object undergoes even acceleration, its velocity does not change.
6. Draw a picture of a hill down which a ball would roll with:
 - a. increasing "v" and decreasing "a"
 - b. increasing "v" and constant "a"
 - c. increasing "v" and increasing "a"

III. Use these graphs to answer the following:

PAY CAREFUL ATTENTION TO QUANTITIES LABELLED ON EACH AXIS!!



Identify the types of motion shown in the first graph, then match the section of graph II which best represents the motion as shown in the sections of graph I.

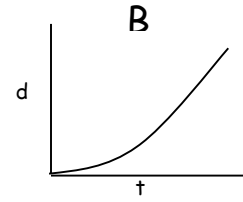
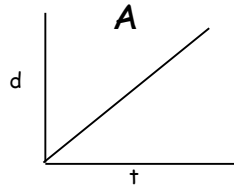
- A - B = _____
- B - C = _____
- C - D = _____
- E - F = _____

In which section(s) of graph II is the instantaneous velocity of the car the same as the average velocity? _____

Which section of the graphs above is impossible? _____ Explain.

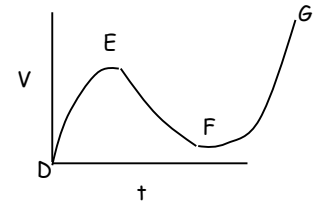
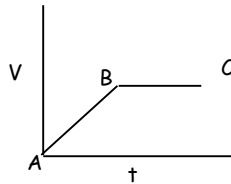
More Graphs:

1. Graph A represents _____ motion.
The (v, a) is constant, and $(v, a) = 0$.



2. Graph B represents _____ motion. Over each second, the v _____.

3. Which section(s) of the graphs to the right represents uniform motion?



4. Which section represents uniformly accelerated motion? _____

5. Which section represents negative acceleration? _____

IV. Problems (Use your own paper if you need more space.)

- The Road Runner steps off a ledge and drops to the ground in 0.50 s. What is Road Runner's velocity the instant it hits? How high is the ledge off the ground?
- In 2.8 s, a car increases its velocity from 20. m/s to 25 m/s. What is the acceleration of the car?
- How long will it take to stop a car if its driver starts braking at a velocity of 32m/s and decelerates the car at 5.0 m/s²? How far will the car travel before it stops?
- A man is driving a car at a constant velocity of 55 mi/h. If he looks down at the radio for 2.2 s, how far has the car moved?
- In a test of car bumpers, a car moving 7.0 m/s collides head-on with a wall. From what height would the car have to be dropped in order to collide with the ground at the same velocity?