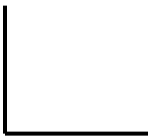
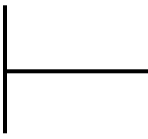
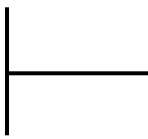

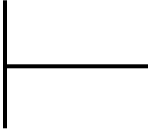
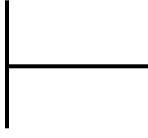

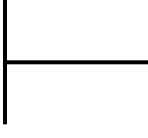
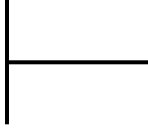

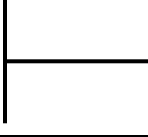
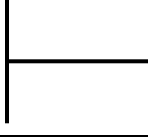
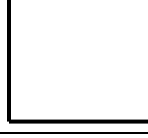

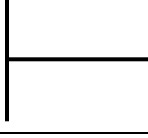
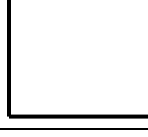
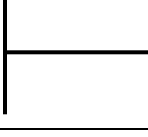
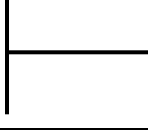
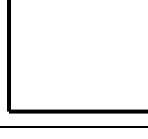
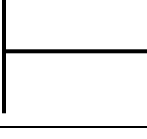
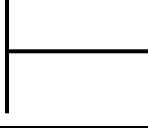


1. Draw the position, velocity and acceleration vs. time graphs for the 7 scenarios of motion discussed in class.

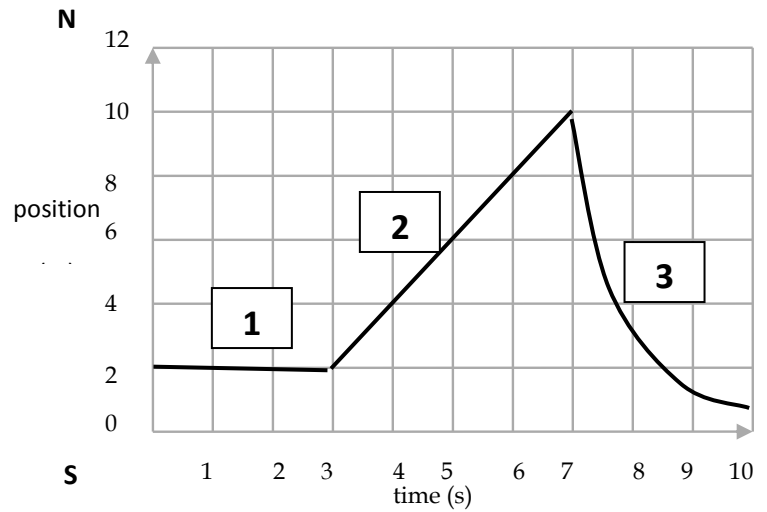
Motion Description	Sign for v & a	Position vs. Time Graph	Velocity vs. Time Graph	Acceleration vs. Time Graph
At Rest	Sign of v: Sign of a:			
Constant Velocity Away	Sign of v: Sign of a:			
Constant Velocity Toward	Sign of v: Sign of a:			
Speeding Up Away	Sign of v: Sign of a:			
Slowing Down Away	Sign of v: Sign of a:			
Speeding Up Toward	Sign of v: Sign of a:			
Slowing Down Toward	Sign of v: Sign of a:			

2. A motorcycle starts from rest and has a constant acceleration. In a certain time interval, its displacement triples. In the same time interval, by what factor does its velocity increase?

3. A car is traveling along a straight road and is decelerating. Does the car's acceleration a necessarily have a negative value?

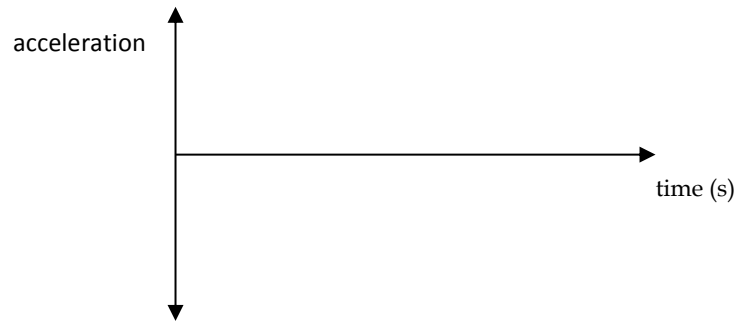
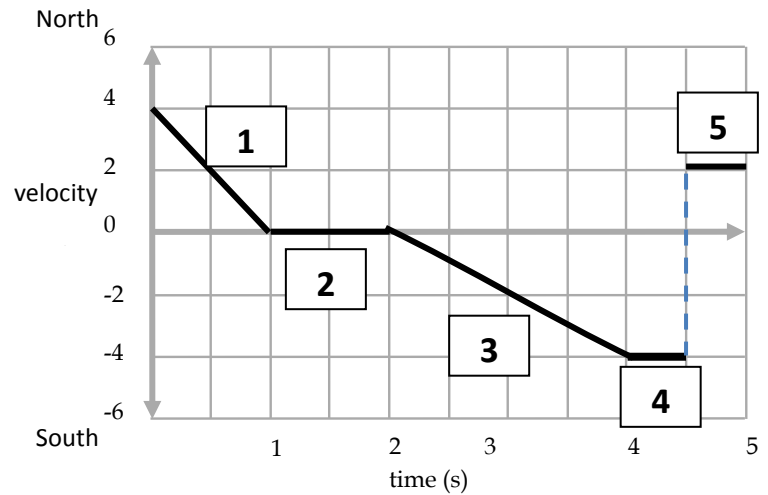
4. A bicyclist accelerates from rest to a velocity of $+7.20 \text{ m/s}$ at a rate of $+1.5 \text{ m/s/s}$. Once at this velocity, the cyclist continues for 10 minutes. Next she approaches a hill and accelerates at a rate of -1.0 m/s/s for 10 s to a velocity of $+5.10 \text{ m/s}$. The cyclist maintains this velocity for the remainder of the uphill decent of 25 m.
- How far has the bicyclist traveled during the entire trip?
 - How long did the total trip take her from her starting point to the top of the hill?
 - What is her average velocity for the trip?

5. Use the position vs. time graph below to answer the questions that follow.
- What is the position at 9 seconds?
 - Describe the motion of the object during each segment.
 - What is the velocity of the object from 0 s to 3 s?
 - What is the velocity of the object from 3 s to 7 s?
 - Draw the velocity vs. time and acceleration vs. time graphs that correspond with the above graph.



6. Use the velocity vs. time graph below to answer the questions that follow.

- What is the instantaneous velocity at 3 seconds?
- Describe the motion of the object during each interval.
- What is the acceleration of the object from 0 s to 1 s?
- What is the displacement of the object from 2 s to 4.5 s?
- What is the acceleration of the object from 4 to 4.5 s?
- How far has the object traveled between 4.5 and 5 s?
- Draw the position vs. time and acceleration vs. time graphs that corresponds to this velocity vs. time graph.



- A football game customarily begins with a coin toss to determine who kicks off. The referee tosses the coin up with an initial velocity of 5.0 m/s. In the absence of air resistance, how high does the coin go above its point of release?
- A car has uniformly accelerated motion and starting from rest has a velocity of + 37 m/s after traveling 175 m. Find the car's acceleration.
- A train running at +26.8 m/s is stopped uniform acceleration (deceleration) in 44 seconds by the application of the brakes.
 - What is the acceleration?
 - What is the distance traveled before coming to rest?
- A book is dropped 2.5 m from a second floor balcony. A 1.65-m tall person that was 3.0 m away when the book was dropped is able to catch the book at waist level (1.0 m above the ground). How fast was the person walking?