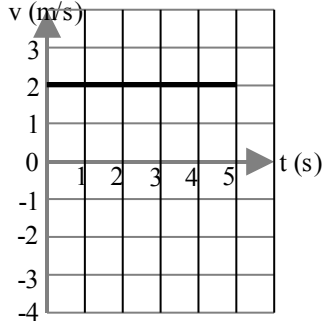
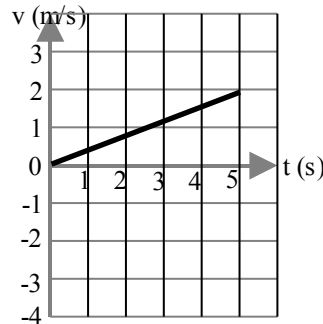


General Physics – Ranking Tasks

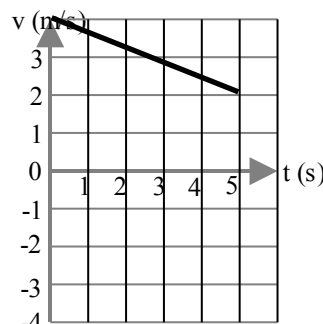
1. The following velocity vs. time graphs describe the motion of different objects. Rank the situations based on the *total distance traveled* for the object during the time shown on the graph. Write your answer in a single line, using the $>$ and $=$ signs to show the relationships.



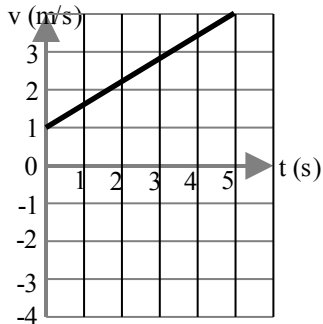
(a)



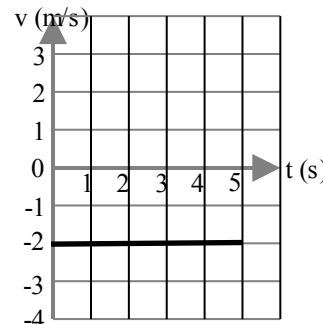
(b)



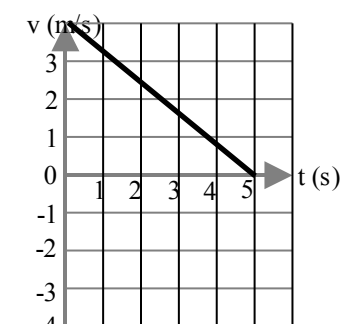
(c)



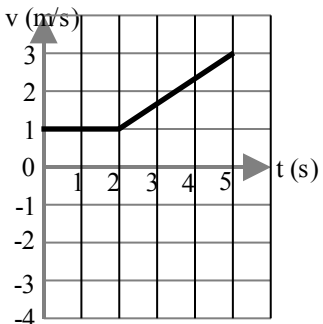
(d)



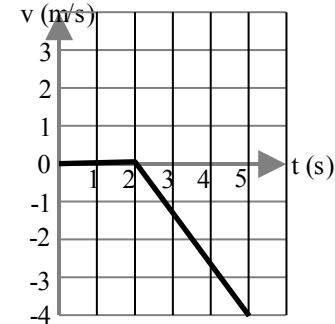
(e)



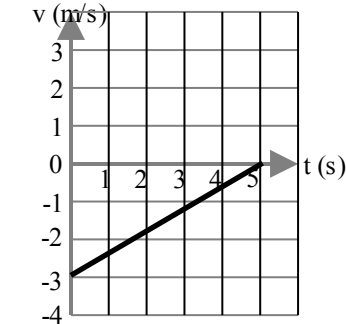
(f)



(g)



(h)



(i)

(i) Ranking:

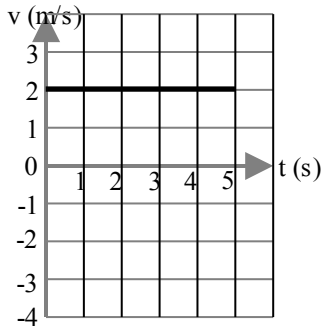
ii. Thoroughly explain the reason for your answer, referring to fundamental principles and experimental results to justify what you have done.

iii. List the situations in which the change in position is positive.

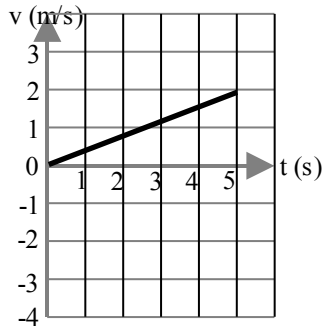
iv. List the situations in which the change in position is negative.

2. The following velocity vs. time graphs describe the motion of different objects. Rank the situations based on the *maximum absolute value of acceleration* during the time

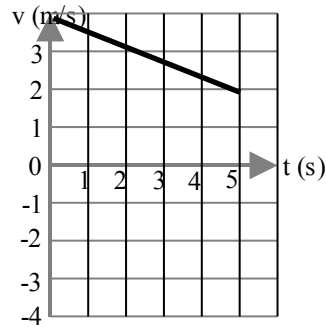
shown on the graph. Write your answer in a single line, using the $>$ and $=$ signs to show the relationships.



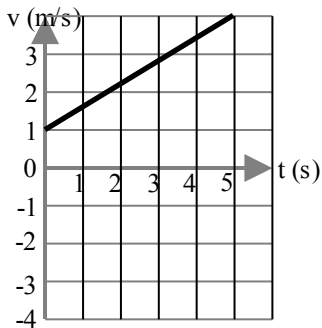
(a)



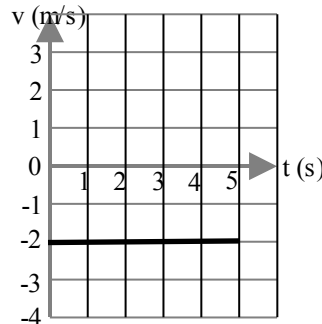
(b)



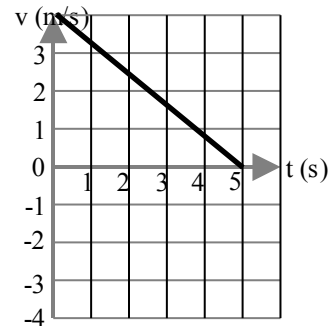
(c)



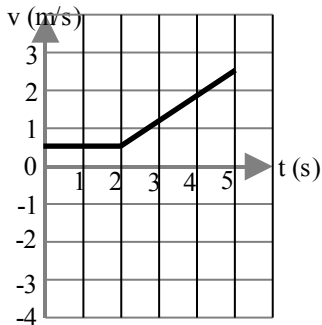
(d)



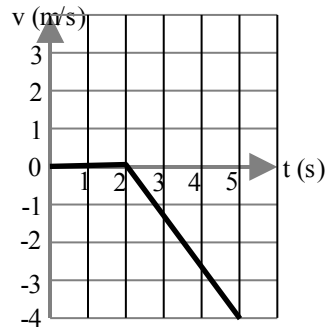
(e)



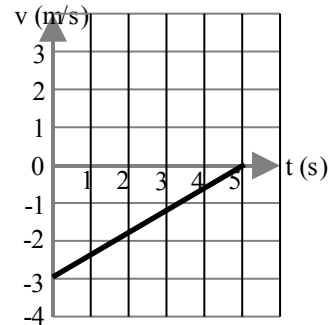
(f)



(g)



(h)



(i)

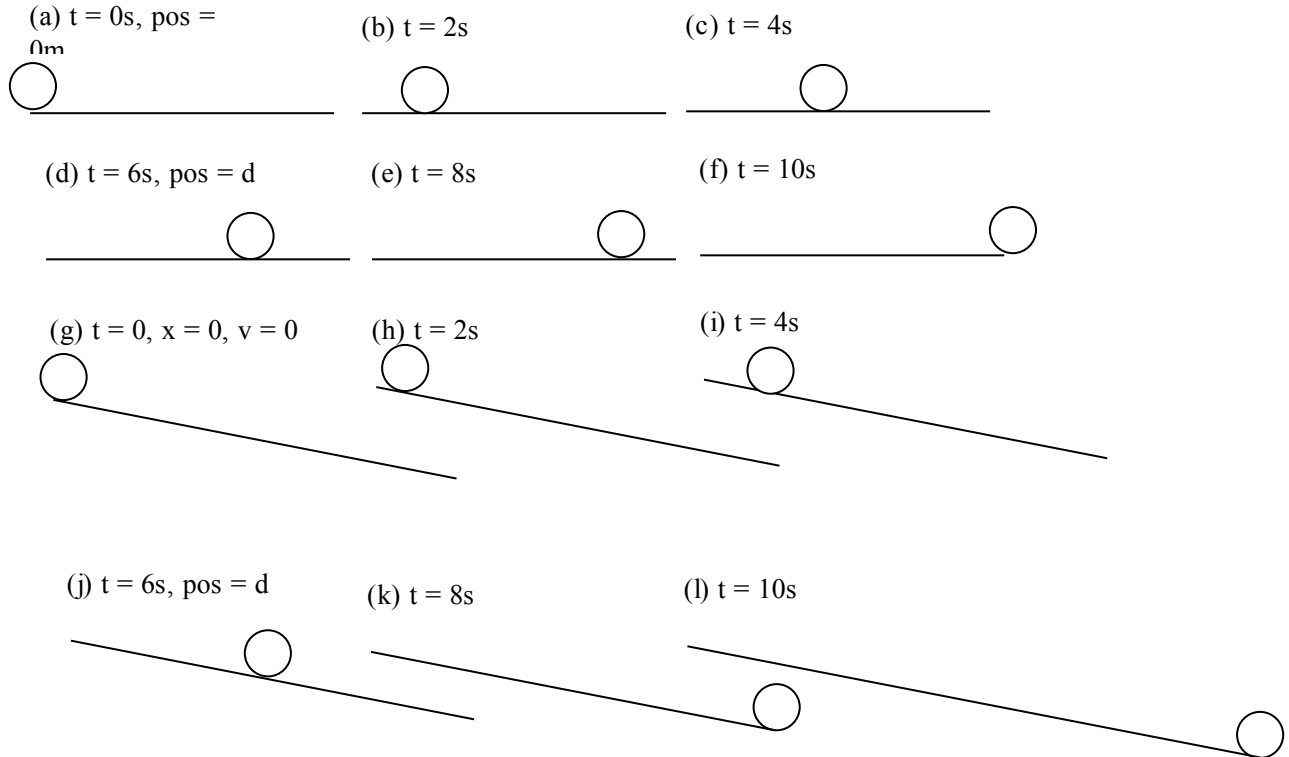
(i) Ranking:

ii. Thoroughly explain the reason for your answer, referring to fundamental principles and experimental results to justify what you have done.

iii. List the situations in which the acceleration is positive.

iv. List the situations in which the acceleration is negative.

Problems 3 and 4 refer to the following situations, which illustrate the position of two different balls at different times. The first ball rolls with constant velocity across a horizontal surface, while the second ball rolls with constant acceleration down an inclined ramp. Both objects are at position zero at time = 0, and both are at position = d at time = 6s.



3. (a) Rank each situation according to the *position* of the ball at the indicated time. Write your answer on a single line, using the $>$ and $=$ signs to show the relationships. NOTE: The pictures are not drawn to scale, so you cannot rely on them to show which ball is ahead.

b. Thoroughly explain the reason for your answer, referring to fundamental principles and experimental results to justify what you have done.

4. Rank each situation according to the *instantaneous velocity* of the ball at the indicated time. Write your answer on a single line, using the $>$ and $=$ signs to show the relationships. NOTE: The pictures are not necessarily drawn to scale.

b. Thoroughly explain the reason for your answer, referring to fundamental principles and experimental results to justify what you have done.