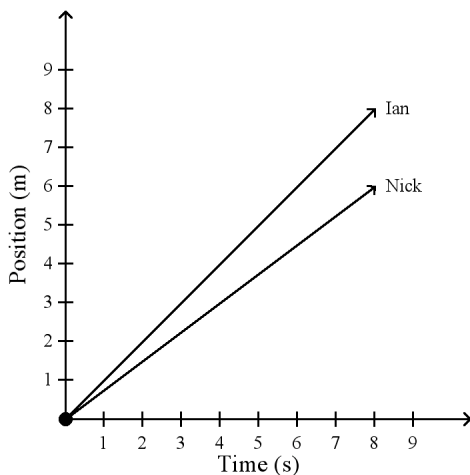


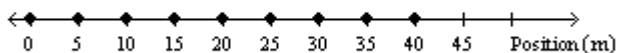
Physics Chapter 2 Supplemental Problems

Short Answer

1. How is displacement different from distance? Under what conditions can an object travel a certain distance and yet its resultant displacement be zero?
2. The position-time graph of an object is found to be a straight line passing through the origin. What information about the motion of the object is provided by the graph?
3. Given below is the position-time graph representing motions of two runners, Nick and Ian. Use this graph to determine which runner has greater average velocity.

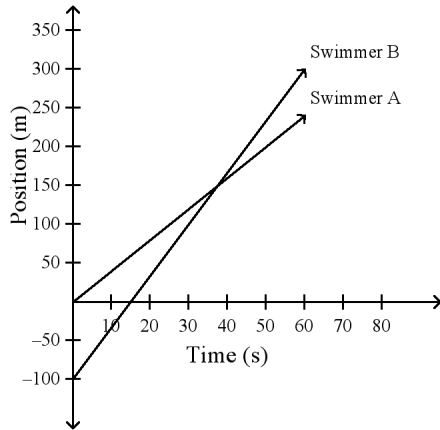


4. Given below is the particle model of a boy skating on a smooth, pedestrian-free sidewalk. The time interval between successive dots is 2 s.



Plot a position-time graph to represent the motion of the boy.

5. Given below is the graph representing the position-time graphs of two swimmers (A and B), swimming in a pool along a straight line. Both the swimmers start from two different positions. Use the graph to find when and where swimmer B passes swimmer A.



6. A boy starts from point A and moves 5 units toward the east, then turns back and moves 3 units toward the west. What is the displacement in the position of the boy?
7. What is the distance traveled by a vehicle in 12 minutes, if its speed is 35 km/h?
8. A student rides his bike to the library 4 km away. Upon arriving, he discovers that he forgot his library card, so he turns around and goes to get it, whereupon he decides to stay home. The entire trip takes 30 minutes. Calculate the student's average velocity and his average speed.
9. In 2005, Lance Armstrong won the 92nd Tour de France by riding 3608 km in 86 hours, 15 minutes and 2 seconds. Ivan Bosso came in second, 4 minutes and 41 seconds behind Armstrong. Michael Rasmussen came in 7th place, 11 minutes and 33 seconds behind Armstrong. What was the average velocity for each rider?

Problem

10. What is the average speed of a cheetah that runs 88 m in 5 seconds?
11. A bicycle travels 15 km in 30 minutes. What is its average speed?