

Physics Practice – Ch. 2

Sketch velocity vs. time graphs corresponding to the following descriptions of the motion of an object.

1. The object is moving away from the origin at a constant (steady) speed.



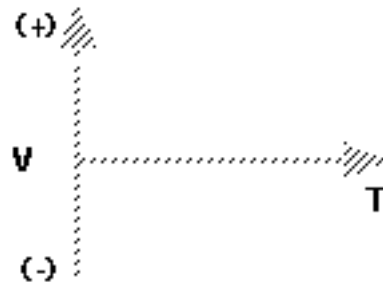
2. The object is standing still.



3. The object moves toward the origin at a steady speed for 10s, then stands still for 10s.

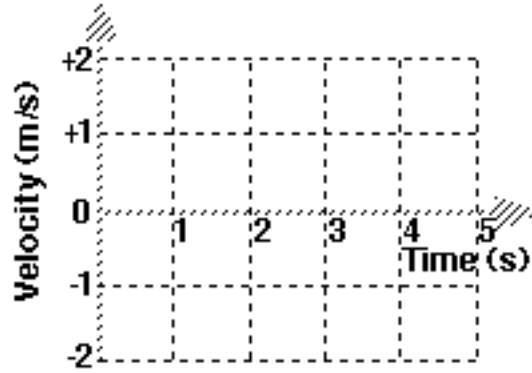
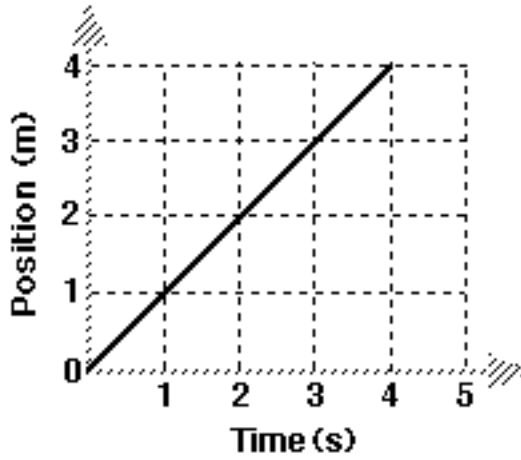


4. The object moves away from the origin at a steady speed for 10s, reverses direction and moves back toward the origin at the same speed.

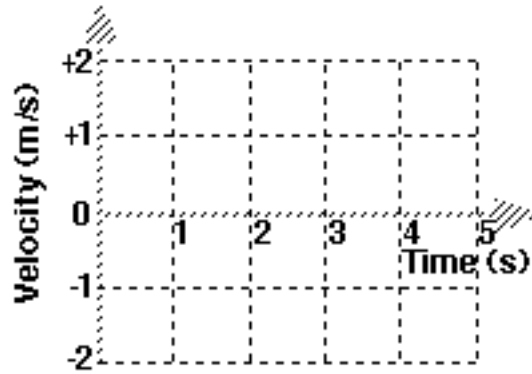
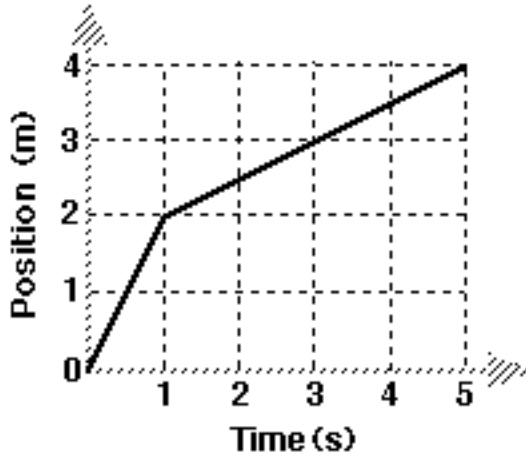


Draw the velocity vs. time graphs for an object whose motion produced the position vs. time graphs shown below at left.

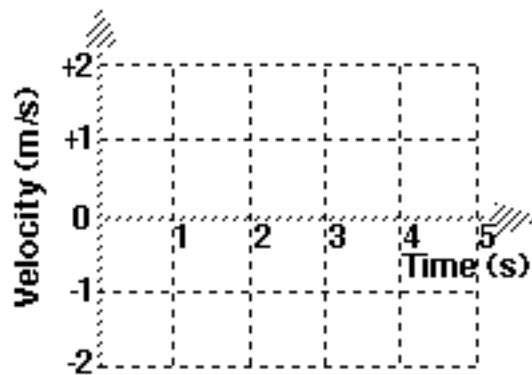
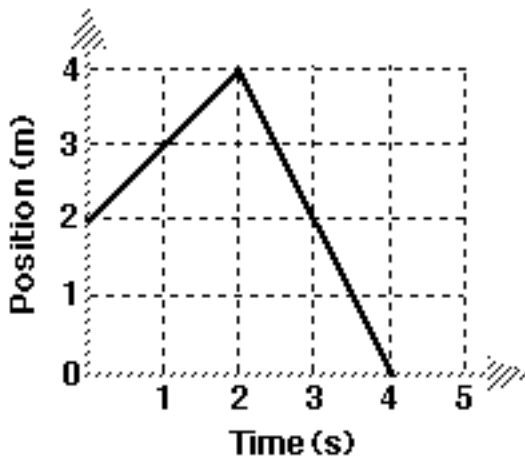
5.



6.



7.



Problem solving Worksheet - Use your notes and examples - Show Formulas, Work, Correct Answer and Correct Units for full credit.

1. If a car goes from 10 mi/h to 95 mi/h in 6 seconds, calculate its acceleration.
2. How fast would the car from #1 be going at the end of 2.65 seconds? (Hint: Use the acceleration solved for in #1 in this problem.)
3. How fast will an elevator be falling if the cable broke 4.25 seconds ago and sent it free falling toward the ground?
4. How far would the elevator fall if it hit the ground in 4.50 seconds.
5. To find out how deep a well is, a talented physics student dropped a rock into the well and timed the fall getting 5.37 seconds. Using expert JP skills and knowing to neglect air resistance, the depth can now be calculated. Show how below!
6. If we were to drive for 2.55 hours at an average of 165 km/h, South and then continue South at an average speed of 135 km/h and drive for 1.5 more hours, what would be our average speed for the entire trip?
7. How fast will a car traveling initially at 100 mi/h be going if it travels 18 seconds at an acceleration of:
 - a. 0 mi/h/s
 - b. 2 mi/h/s