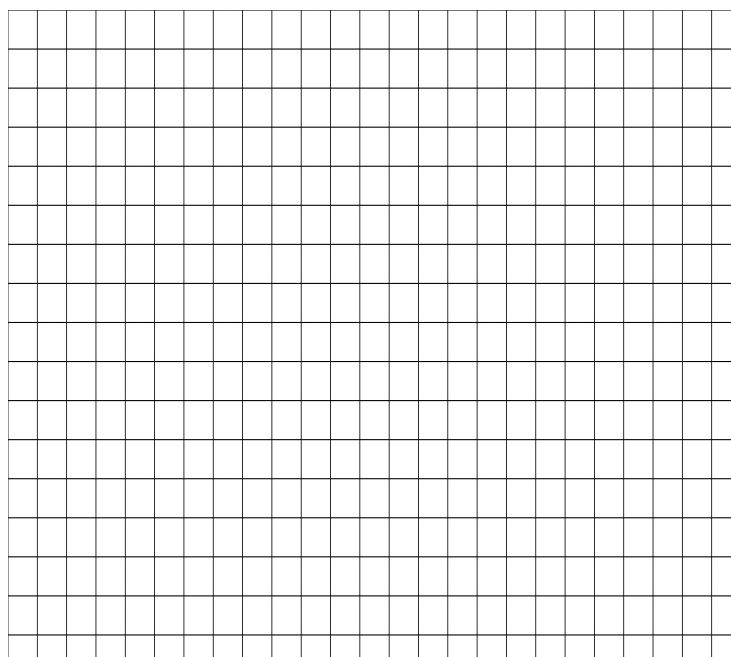
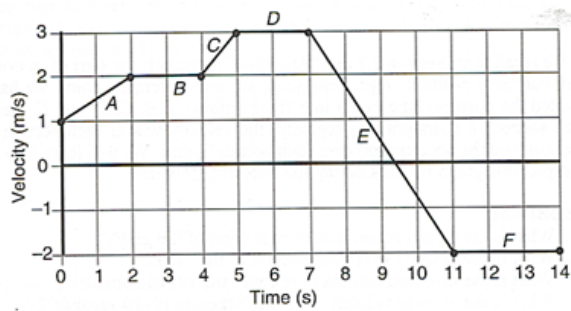


Distance vs. Time Graphs

Time (s)							
Distance (m)							



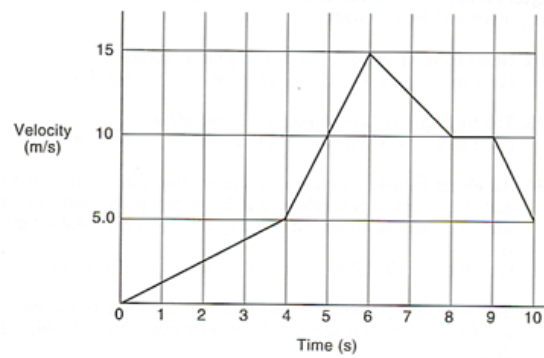
Displacement, Velocity, Acceleration vs. Time Graphs



PROBLEM

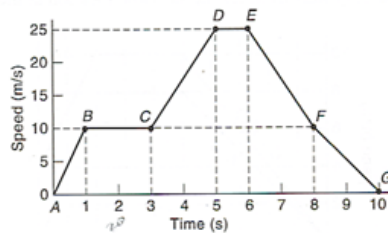
1. What is the average velocity within each section of the graph?
2. What is the acceleration within each section of the graph?
3. When does the object come to rest?
4. When does the object reverse the direction of its motion?
5. What is the displacement within each section of the graph?
6. What is the displacement over the entire trip (0–14 seconds)?
7. What is the average velocity over the entire trip (0–14 seconds)?
8. What is the shape of the corresponding *acceleration versus time* graph?

5a. Dis. Vel. Acc.Time Graphs.notebook



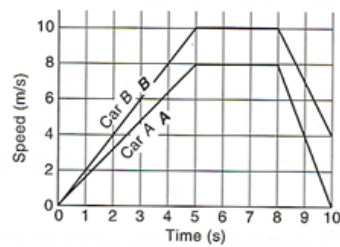
33. During which time interval did the object travel the greatest distance?
(1) 0 s to 4 s (2) 4 s to 6 s (3) 6 s to 8 s (4) 9 s to 10 s
34. During which time interval did the object have the greatest positive acceleration?
(1) 0 s to 4 s (2) 4 s to 6 s (3) 6 s to 8 s (4) 9 s to 10 s
35. What was the acceleration of the object during the time interval between 4 seconds and 6 seconds?
(1) $20. \text{ m/s}^2$ (2) $10. \text{ m/s}^2$ (3) 5.0 m/s^2 (4) 0.20 m/s^2
36. What distance did the object travel during the time interval between 9 seconds and 10 seconds?
(1) 5.0 m (2) 7.5 m (3) 10. m (4) 20. m

5a. Dis. Vel. Acc.Time Graphs.notebook



37. What is the acceleration of the object during the time interval $t = 3$ seconds to $t = 5$ seconds?
 (1) 5.0 m/s^2 (2) 7.5 m/s^2 (3) 12.5 m/s^2 (4) 17.5 m/s^2
38. What is the average speed of the object during the time interval $t = 6$ seconds to $t = 8$ seconds?
 (1) 7.5 m/s (2) 10 m/s (3) 15 m/s (4) 17.5 m/s
39. What is the total distance traveled by the object during the first 3 seconds?
 (1) 15 m (2) 20 m (3) 25 m (4) 30 m
40. During the interval $t = 8$ seconds to $t = 10$ seconds, the speed of the object is
 (1) zero (2) increasing (3) decreasing (4) constant, but not zero
41. What is the maximum speed reached by the object during the 10 seconds of travel?
 (1) 10 m/s (2) 25 m/s (3) 150 m/s (4) 250 m/s

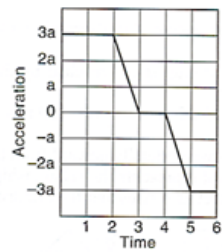
5a. Dis. Vel. Acc.Time Graphs.notebook



43. What is the magnitude of the acceleration of car *A* during the period between $t = 8$ seconds and $t = 10$ seconds?
(1) 20 m/s^2 (2) 16 m/s^2 (3) 18 m/s^2 (4) 4 m/s^2
44. Compared to the speed of car *B* at 6 seconds, the speed of car *A* at 6 seconds is
(1) less (2) greater (3) the same
45. The graph represents the acceleration acting on an object as a function of time. During which time interval is the velocity of the object constant?

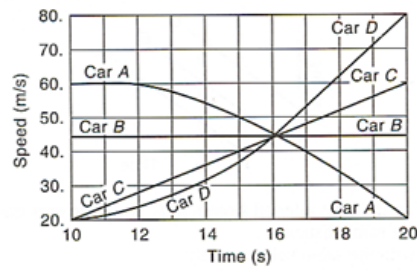
5a. Dis. Vel. Acc. Time Graphs.notebook

45. The graph represents the acceleration acting on an object as a function of time. During which time interval is the velocity of the object constant?

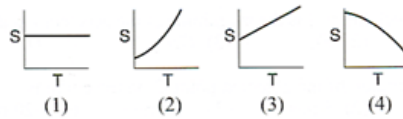


- (1) 0 to 2 (2) 2 to 3 (3) 3 to 4 (4) 4 to 5

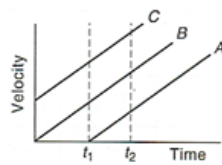
5a. Dis. Vel. Acc. Time Graphs.notebook



46. The speed of car C at time $t = 20$ seconds is closest to
 (1) 60 m/s (2) 45 m/s (3) 3.0 m/s (4) 4.0 m/s
47. Which car has zero acceleration?
 (1) A (2) B (3) C (4) D
48. Which car has a negative acceleration?
 (1) A (2) B (3) C (4) D
49. Which car moves the greatest distance in the time interval $t = 10$ seconds to $t = 16$ seconds?
 (1) A (2) B (3) C (4) D
50. Which graph best represents the relationship between distance and time for car C?

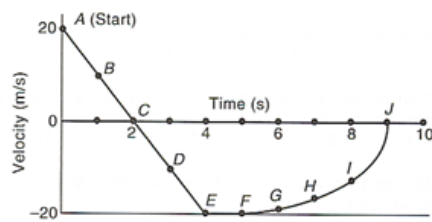


5a. Dis. Vel. Acc. Time Graphs.notebook



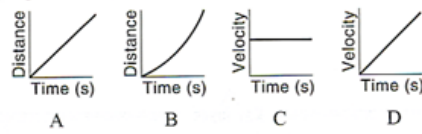
- During the time interval from t_1 to t_2 , the three cars travel
- (1) the same distance
 - (2) with the same velocity, only
 - (3) with the same acceleration, only
 - (4) with both the same velocity and acceleration

5a. Dis. Vel. Acc.Time Graphs.notebook



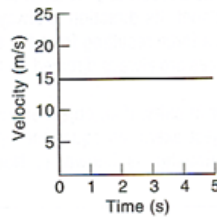
52. During which interval is the magnitude of the acceleration greatest?
 (1) EF (2) FG (3) GH (4) IJ
53. The acceleration of the object at point D on the curve is
 (1) 0 m/s^2 (2) 5 m/s^2 (3) -10 m/s^2 (4) -20 m/s^2
54. During what interval does the object have zero acceleration?
 (1) BC (2) EF (3) GH (4) HI
55. At what point is the distance from start zero?
 (1) C (2) E (3) F (4) J
56. At what point is the distance from start a maximum?
 (1) C (2) E (3) G (4) J

57. Which combination of graphs best describes free-fall motion?
[Neglect air resistance.]



- (1) *A* and *C* (2) *B* and *D* (3) *A* and *D* (4) *B* and *C*

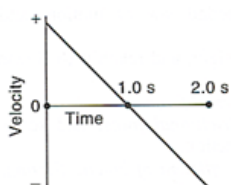
58. The graph below represents the relationship between velocity and time for an object moving in a straight line. What is the acceleration of the object?



- (1) 0 m/s^2 (2) 5 m/s^2 (3) 3 m/s^2 (4) 15 m/s^2

5a. Dis. Vel. Acc. Time Graphs.notebook

59. The graph below represents the velocity versus time relationship for a ball thrown vertically upward. Time zero represents the time of release.



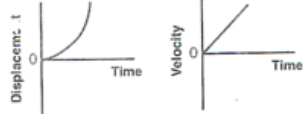
- During the time interval between 1.0 second and 2.0 seconds, the displacement of the ball from the point where it was released
- (1) decreases (2) increases (3) remains the same
60. The area under a speed versus time curve is a measure of
- (1) acceleration (2) distance (3) momentum (4) velocity

5a. Dis. Vel. Acc. Time Graphs.notebook

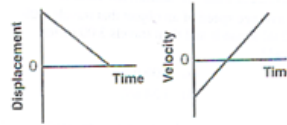
d, v, a

6. Which pair of graphs represents the same motion of an object?

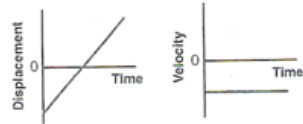
(1)



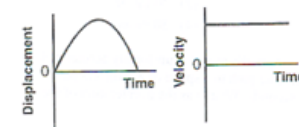
(3)



(2)

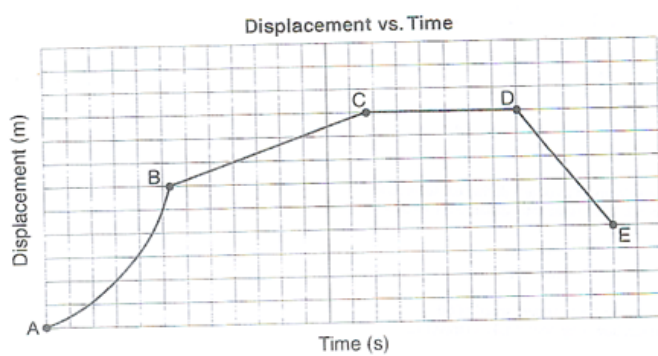


(4)



5a. Dis. Vel. Acc. Time Graphs.notebook

5. The displacement-time graph below represents the motion of a cart initially moving forward along a straight line.



During which interval is the cart moving forward at constant speed?

(1) *CD*

(2) *AB*

(3) *BC*

(4) *DE*