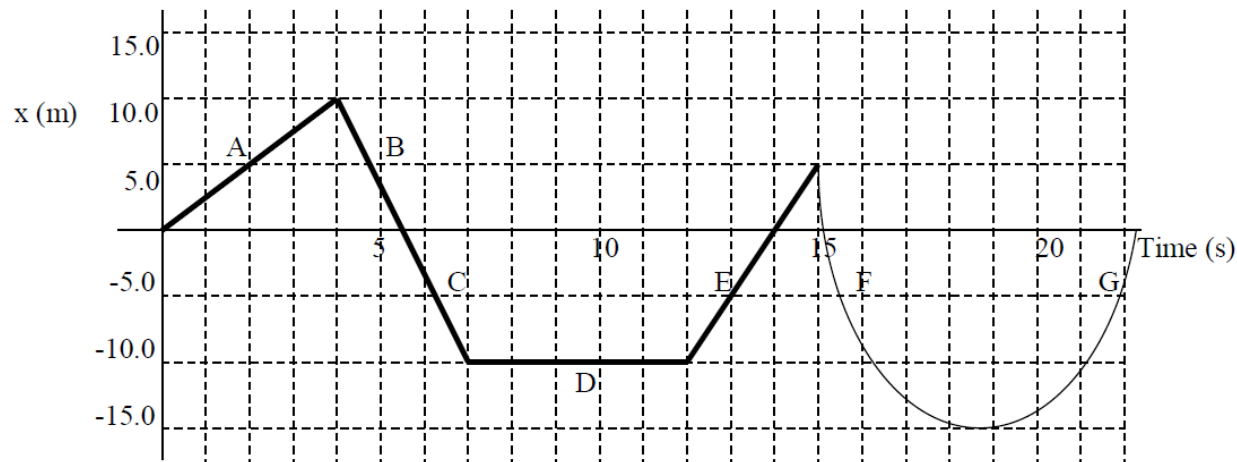
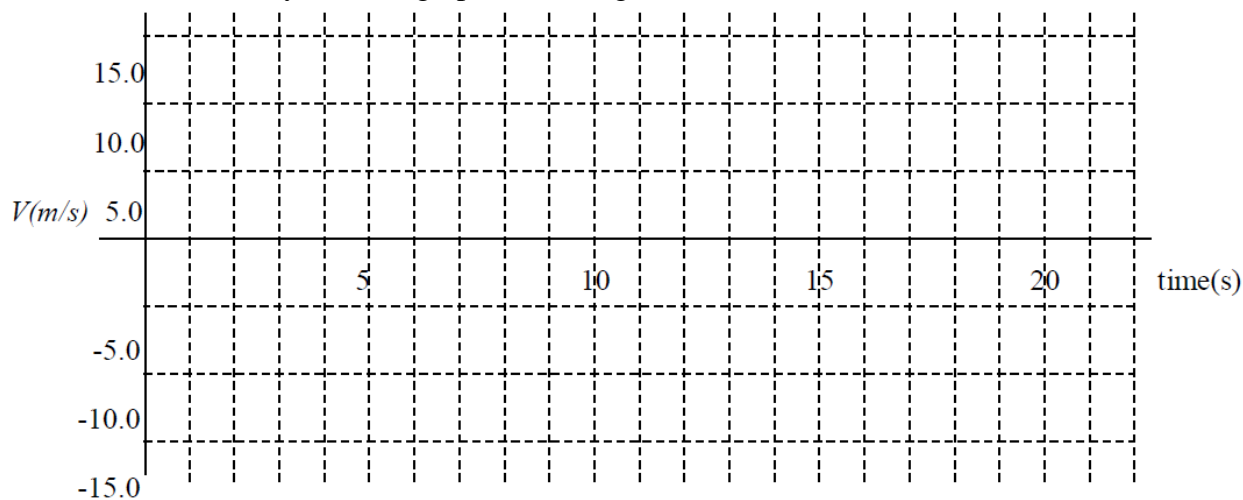


Kinematics Practice (Motion Graphs)

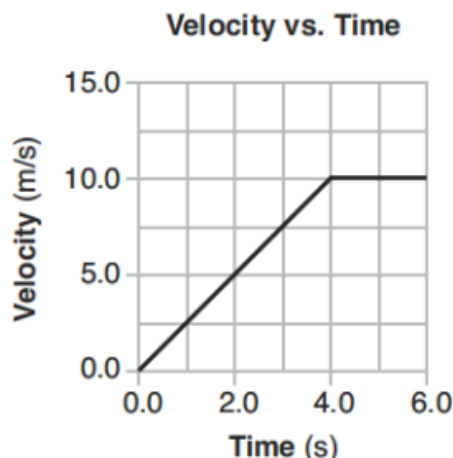
- Little Joey plays with his remote control car, and generates the motion graph below. The car starts by moving east.



- Identify section(s) where the car moves with constant velocity.
- Identify section(s) where the car moves west.
- Identify section(s) where the car speeds up.
- When is the car at rest?
- What is the average velocity of the car between 0 and 15 seconds?
- What is the average **speed** of the car in the same time interval?
- What is the total displacement of the car from 0 to 22 seconds?
- Describe the motion of the car in the sections F and G taken together.
- Draw a velocity vs. time graph describing the motion of the car from 0-20s.



Base your answers to questions 11 and 12 on the graph below, which represents the motion of a car during a 6-second time interval.



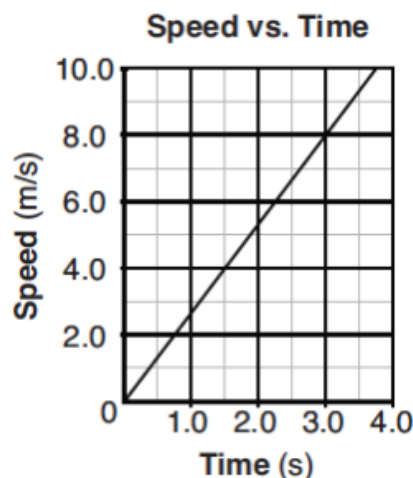
11. What is the acceleration of the car at $t=5.0$ seconds?

1. 0.0 m/s^2
2. 2.0 m/s^2
3. 2.5 m/s^2
4. 10 m/s^2

12. What is the total distance traveled by the car during this 6-second interval?

1. 10 m
2. 20 m
3. 40 m
4. 60 m

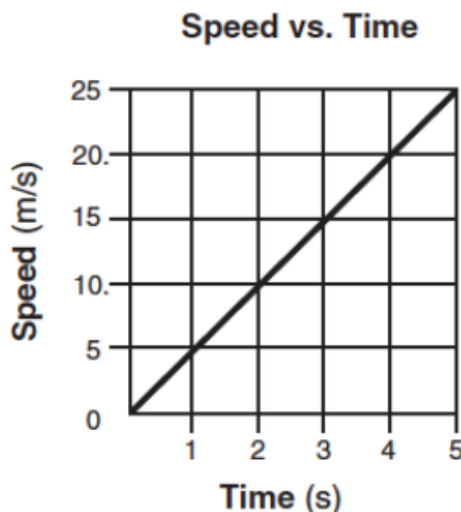
14. The graph below shows the relationship between the speed and elapsed time for an object falling freely from rest near the surface of a planet.



What is the total distance the object falls during the first 3 seconds?

1. 12 m
2. 24 m
3. 44 m
4. 72 m

15. The graph below represents the relationship between speed and time for an object moving along a straight line.



What is the total distance traveled by the object during the first 4 seconds?

1. 5 m
2. 20 m
3. 40 m
4. 80 m

13. Which graph best represents the relationship between the velocity of an object thrown straight upward from Earth's surface and the time that elapses while it is in the air? [Neglect friction.]

