Name: Date:

Average Velocity Practice

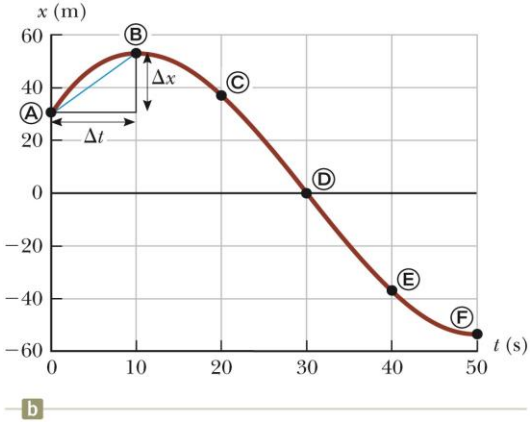
Three visuals to show data of an object in motion:

Table

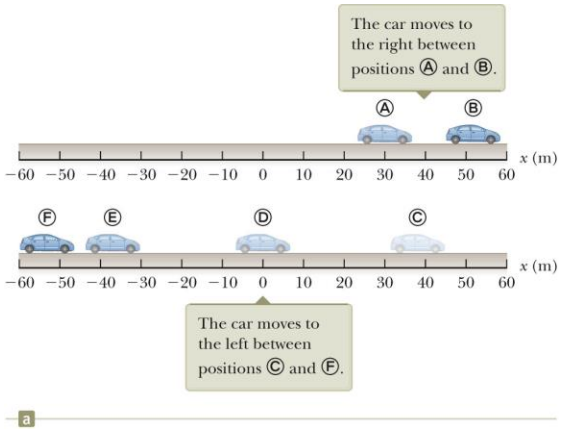
Position of the Car at Various Times

Position	t (s)	x (m)
Ⓐ	0	30
Ⓑ	10	52
Ⓒ	20	38
Ⓓ	30	0
Ⓔ	40	−37
Ⓕ	50	−53

Graphical



Model



1. What is the average velocity of:
   a. A to C?
   b. E to F?
   c. A to F?

2. At which point does the magnitude of instantaneous velocity seem to be the greatest (direction doesn't matter)?

3. At which point does the car change directions?

4. At what time does the car return to the same location as it began?

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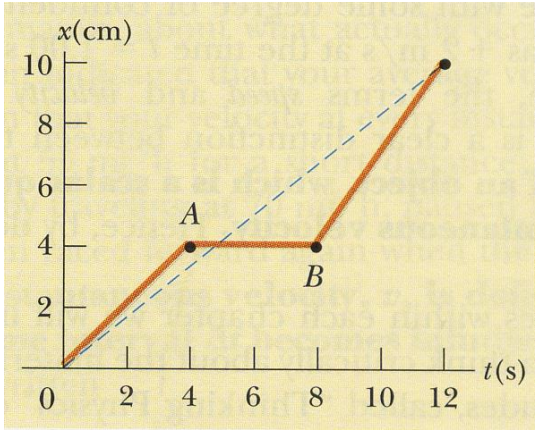
Find

1. The average velocity for the total trip.
2. The average velocity for 0.0 s- 4.0 s.
3. The average velocity for 4.0 s- 8.0 s.



4. The average velocity for 8.0 s- 12.0 s.
5. The instantaneous velocity at t = 2.0 s.
6. The instantaneous velocity at t = 5.0 s.

Car A travels from Charleston to Los Angeles at a speed of 30 m/s. Car B travels from Los Angeles to Charleston at a speed of 30 m/s.

7. Are the velocities of the two cars different? Explain.

8. If car A returns at the same speed, what is its average velocity for the trip? Explain.

A child is pushing a shopping cart at a speed 1.5 m/s.

9. How long will it take the child to push the cart down an aisle with a length of 9.3m?

Critical Thinking:

10. How does average velocity and average speed compare?

11. What is an example of an object that has a positive average speed but an average velocity of 0?