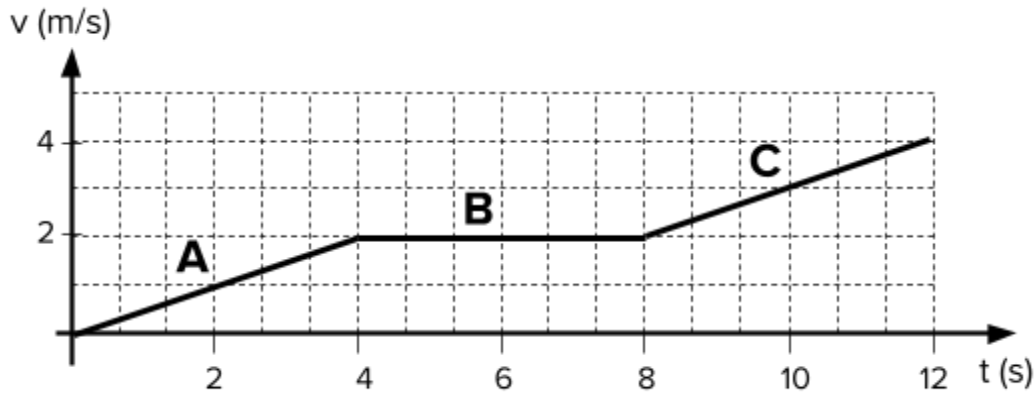


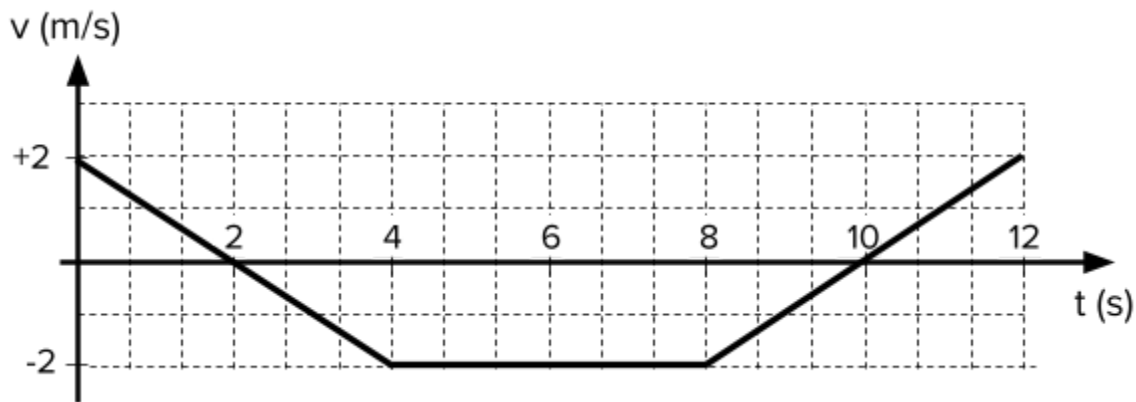
Velocity vs. time graphs



1. A person moves according to the velocity vs. time graph shown above. How do the average speeds v , accelerations, and displacements Δx that occur during each 4 second long time period (A, B, C) compare?

Average Speeds	Acceleration	Displacements
(A) $v_C = v_A > v_B$	$a_C = a_A > a_B$	$\Delta x_C > \Delta x_A > \Delta x_B$
(B) $v_C = v_A > v_B$	$a_C > a_A > a_B$	$\Delta x_C = \Delta x_A > \Delta x_B$
(C) $v_C > v_B > v_A$	$a_C = a_A > a_B$	$\Delta x_C > \Delta x_B > \Delta x_A$
(D) $v_C > v_A > v_B$	$a_C > a_A > a_B$	$\Delta x_C = \Delta x_A > \Delta x_B$

Answer:



2. An object moves according to the velocity graph shown above. Which TWO of the statements below about the motion of the object are correct?

- (A) The object is slowing down between 2s and 4s
- (B) The object is slowing down between 8s and 10s
- (C) The object has zero acceleration at 10s
- (D) The object ends up to the left of where it started

Answer:

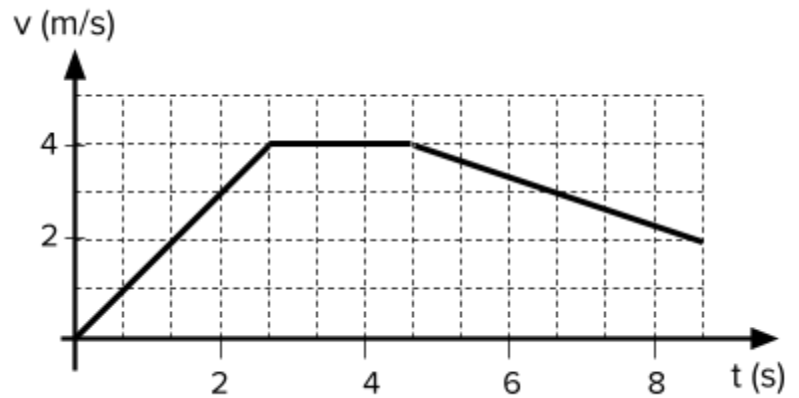
3. A car moves according to the velocity graph shown above. What would be the best description of the motion of the car?

(A) The car starts at rest, then moves rightward at constant speed, then stops, then turns around and moves leftward at constant speed

(B) The car starts at rest and moves rightward speeding up, then stops, then turns around and moves leftward speeding up

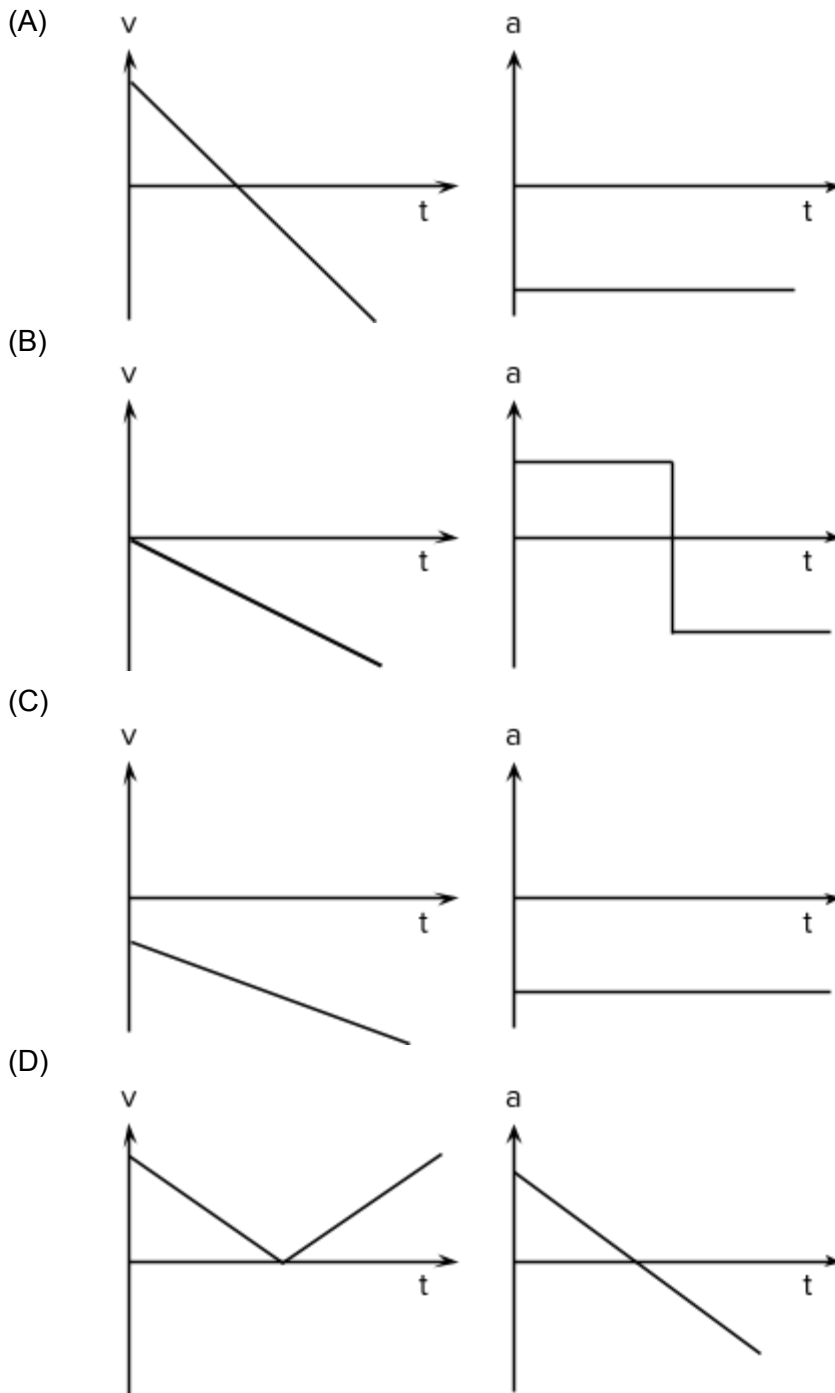
(C) The car starts at rest and moves rightward speeding up, then moves with constant speed, then continues moving rightward and slows down

(D) The car starts at rest and moves rightward speeding up, then moves with constant speed, then turns around and moves leftward and slows down



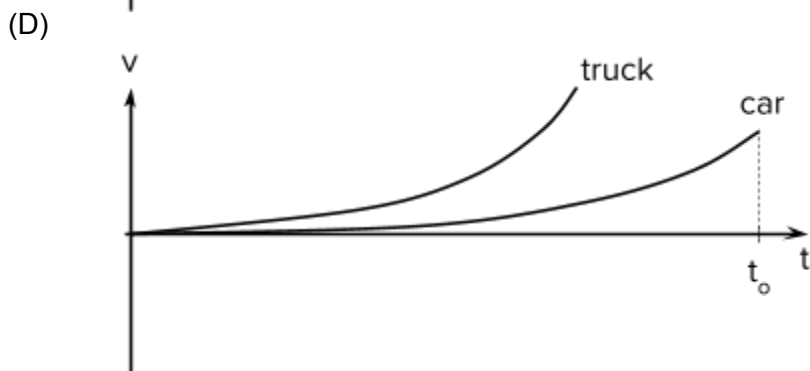
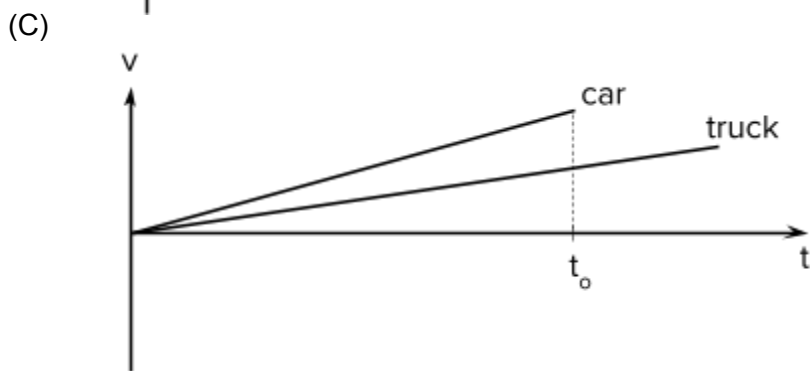
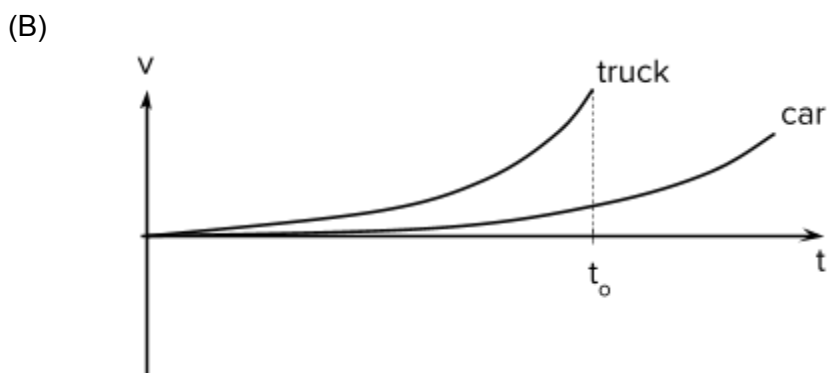
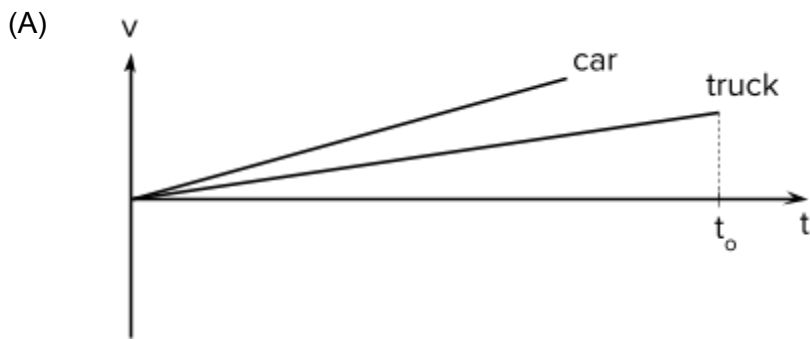
Answer:

4. A ball is thrown straight downward off the top of a bridge and strikes the water below. What would be the best graph of the velocity of the ball and acceleration of the ball from the time the ball is released until right before it hits the water? Assume upward is the positive direction.



Ans:

5. A car and a truck race each other. Both vehicles start moving from rest at the same starting line and drive to the same finish line. The velocities that the vehicles had during the race as a function of time are shown below. Which of the graphs below would be consistent with the truck winning the race in a time t_0 ?



Ans: