

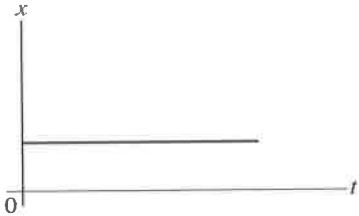
Ch2MidYrReview

2.1 Conceptual Questions

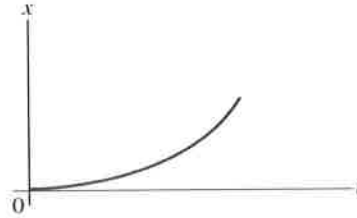
- _____ 1) Consider a deer that runs from point A to point B. The distance the deer runs can be greater than the magnitude of its displacement, but the magnitude of the displacement can never be greater than the distance it runs.
- A) True
 - B) False
- _____ 2) Which of the following quantities has units of a displacement? (There could be more than one correct choice.)
- A) 32 ft/s^2 vertically downward
 - B) 40 km southwest
 - C) 9.8 m/s^2
 - D) -120 m/s
 - E) 186,000 mi
- _____ 3) Suppose that an object travels from one point in space to another. Make a comparison between the magnitude of the displacement and the distance traveled by this object.
- A) The displacement is either greater than or equal to the distance traveled.
 - B) The displacement is always equal to the distance traveled.
 - C) The displacement is either less than or equal to the distance traveled.
 - D) The displacement can be either greater than, smaller than, or equal to the distance traveled.
- _____ 4) Consider a car that travels between points A and B. The car's average speed can be greater than the magnitude of its average velocity, but the magnitude of its average velocity can never be greater than its average speed.
- A) True
 - B) False
- _____ 5) Which of the following quantities has units of a velocity? (There could be more than one correct choice.)
- A) 40 km southwest
 - B) -120 m/s
 - C) 9.8 m/s^2 downward
 - D) 186,000 mi
 - E) 9.8 m/s downward
- _____ 6) When is the average velocity of an object equal to the instantaneous velocity?
- A) only when the velocity is increasing at a constant rate
 - B) only when the velocity is decreasing at a constant rate
 - C) when the velocity is constant
 - D) always
 - E) never

- 7) An object is moving with constant non-zero velocity in the $+x$ direction. The position versus time graph of this object is
- A) a horizontal straight line.
 - B) a vertical straight line.
 - C) a straight line making an angle with the time axis.
 - D) a parabolic curve.
- 8) Which of the following graphs represent an object at rest? (There could be more than one correct choice.)

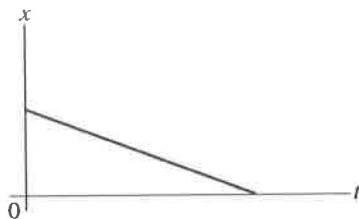
(a)



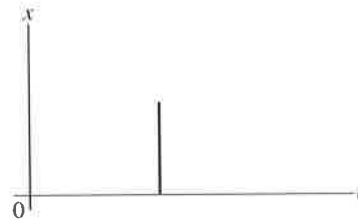
(b)



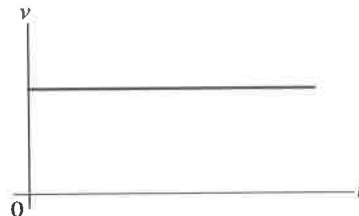
(c)



(d)

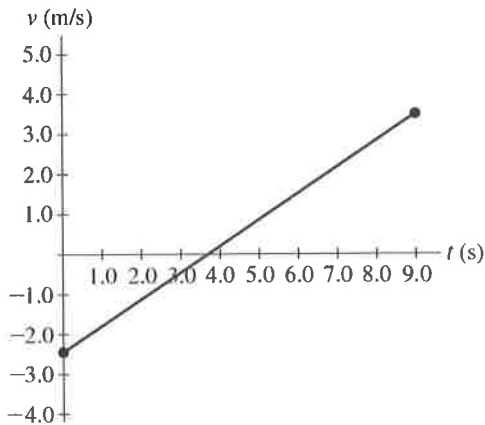


(e)



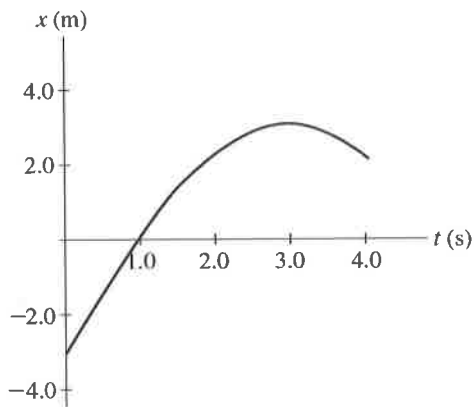
- A) graph a
- B) graph b
- C) graph c
- D) graph d
- E) graph e

- ___ 9) The motion of a particle is described in the velocity vs. time graph shown in the figure.



Over the nine-second interval shown, we can say that the *speed* of the particle

- A) only increases.
 - B) only decreases.
 - C) increases and then decreases.
 - D) decreases and then increases.
 - E) remains constant.
- ___ 10) The graph in the figure shows the position of a particle as it travels along the x -axis.

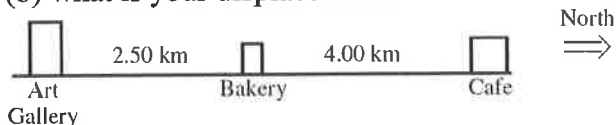


At what value of t is the speed of the particle equal to 0 m/s?

- A) 0 s
- B) 1 s
- C) 2 s
- D) 3 s
- E) 4 s

2.2 Problems

- 11) If, in the figure, you start from the Bakery, travel to the Cafe, and then to the Art Gallery
- (a) what distance you have traveled?
- (b) what is your displacement?



- 12) If you are driving 72 km/h along a straight road and you look to the side for 4.0 s, how far do you travel during this inattentive period?
- A) 18 m
B) 20 m
C) 40 m
D) 80 m
- 13) If you run a complete loop around an outdoor track of length 400 m in 100 s, find your
- (a) average velocity and (b) average speed.
- 14) A polar bear starts at the North Pole. It travels 1.0 km south, then 1.0 km east, and then 1.0 km north to return to its starting point. This trip takes 45 min. What was the bear's average speed?
- A) 0.00 km/h
B) 0.067 km/h
C) 4.0 km/h
D) 5.3 km/h
- 15) A polar bear starts at the North Pole. It travels 1.0 km south, then 1.0 km east, and then 1.0 km north to return to its starting point. This trip takes 45 min. What was the bear's average velocity?
- A) 0.00 km/h
B) 0.067 km/h
C) 4.0 km/h
D) 5.3 km/h
- 16) A runner runs around a track consisting of two parallel lines 96 m long connected at the ends by two semicircles with a radius of 49 m. She completes one lap in 100 seconds. What is her average velocity?
- A) 2.5 m/s
B) 5.0 m/s
C) 10 m/s
D) 0 m/s
E) 1.3 m/s

Ch2MidYrReview
Answer Section

- | | | |
|---|--------|-------------|
| 1) ANS: A | PTS: 1 | REF: Var: 1 |
| 2) ANS: B, E | PTS: 1 | REF: Var: 1 |
| 3) ANS: C | PTS: 1 | REF: Var: 1 |
| 4) ANS: A | PTS: 1 | REF: Var: 1 |
| 5) ANS: B, E | PTS: 1 | REF: Var: 1 |
| 6) ANS: C | PTS: 1 | REF: Var: 1 |
| 7) ANS: C | PTS: 1 | REF: Var: 1 |
| 8) ANS: A | PTS: 1 | REF: Var: 1 |
| 9) ANS: D | PTS: 1 | REF: Var: 1 |
| 10) ANS: D | PTS: 1 | REF: Var: 1 |
| 11) ANS:
(a) 10.5 km (b) 2.50 km south | | |
| | PTS: 1 | REF: Var: 1 |
| 12) ANS: D | PTS: 1 | REF: Var: 4 |
| 13) ANS:
(a) 0 m/s (b) 4 m/s | | |
| | PTS: 1 | REF: Var: 1 |
| 14) ANS: C | PTS: 1 | REF: Var: 1 |
| 15) ANS: A | PTS: 1 | REF: Var: 1 |
| 16) ANS: D | PTS: 1 | REF: Var: 1 |