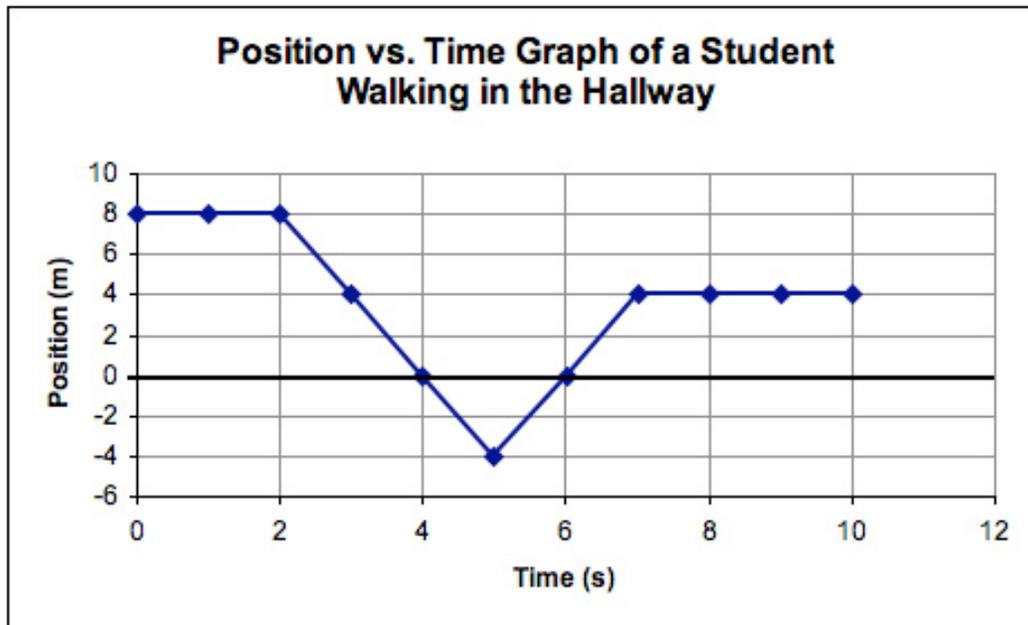


**2016 October Test – Science 10 [Motion]**

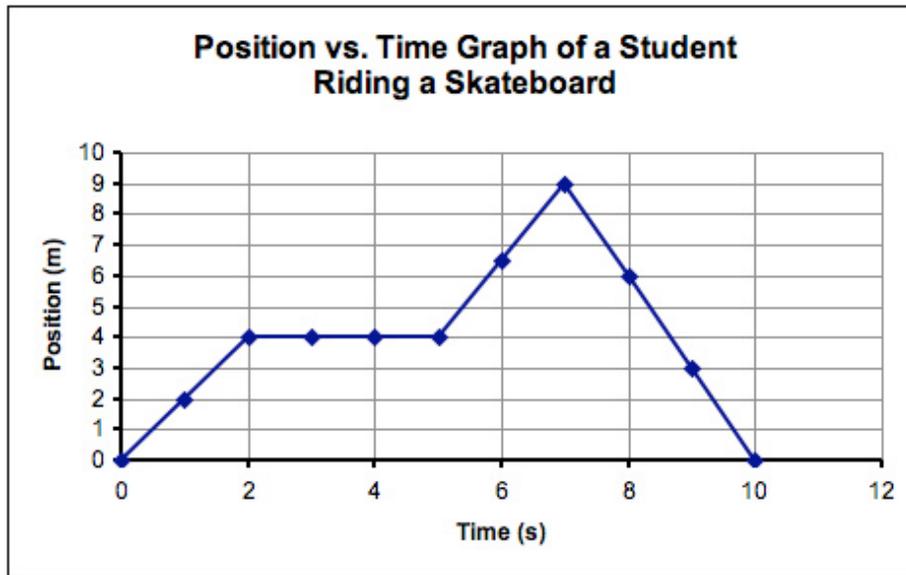
- 1) Which of the following is an example of an object experiencing uniform motion?
  - A. a baseball being hit by a bat
  - B. a car accelerating at a green light
  - C. a space shuttle launching into orbit
  - D. a toy car crossing the floor at a constant speed
  
- 2) Which of the following quantities represents the rate of change of an object's position?
  - A. velocity
  - B. displacement
  - C. acceleration
  - D. time interval
  
- 3) Dexter uses a compass to walk 140 m due east. Which of the following correctly measures his distance and displacement?
  - A. Distance and displacement are both 140 m.
  - B. Distance and displacement are both 140 m [East].
  - C. Distance is 140 m and displacement is 140 m [East].
  - D. Distance is 140 m [East] and displacement is 140 m.
  
- 4) Which of the following symbols represents displacement?
  - A.  $\bar{d}$
  - B.  $d$
  - C.  $D$
  - D.  $\Delta$
  
- 5) Stephen walks 1.0 km directly east to the store and then walks 0.5 km west to his friend's house. What is Stephen's displacement?
  - A. 0.5 km [W]
  - B. 0.5 km [E]
  - C. 1.5 km [W]
  - D. 1.5 km [E]

Use the following graph to answer the next two questions:



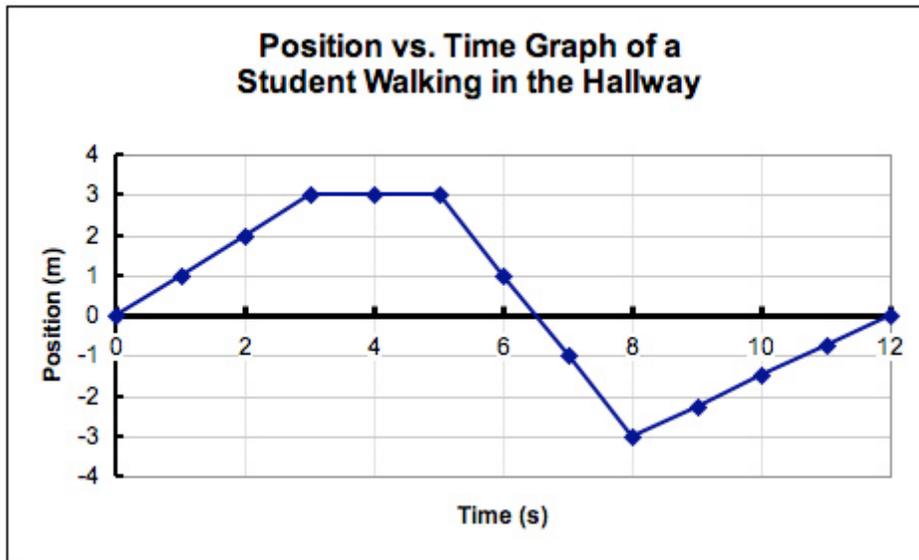
- 6) What is the total distance travelled by the student?
- A. 4 m
  - B. 8 m
  - C. 12 m
  - D. 20 m
- 7) What is the magnitude of the displacement of the student?
- A. 4 m
  - B. 8 m
  - C. 12 m
  - D. 20 m
- 8) What is the average velocity of a bird that flies 6 m [South] in 2 s?
- A. 0.33 m/s [South]
  - B. 3 m/s [South]
  - C. 6 m/s [South]
  - D. 12 m/s [South]

Use the following graph to answer the next question:



- 9) Which of the following statements correctly describes the motion represented on the graph?
- A. constant speed forward, stopped, constant speed forward, decreasing speed forward
  - B. increasing speed forward, stopped, increasing speed forward, decreasing speed backward
  - C. increasing speed forward, constant speed forward, increasing speed forward, slowing down forward
  - D. constant speed forward, stopped, constant speed forward, constant speed backward
- 10) Juliette is driving her car when she sees a cat run across the road. If she is able to stop the car over a distance of 0.025 km in 2.5 s, what is her average acceleration?
- A.  $+10 \text{ m/s}^2$
  - B.  $+0.01 \text{ m/s}^2$
  - C.  $-0.004 \text{ m/s}^2$
  - D.  $-4 \text{ m/s}^2$
- 11) Newborn hatchling turtles can swim approximately 40 km in 30 hours. How long would it take them to swim 15 m?
- A. 5.5 s
  - B. 11.3 s
  - C. 20.0 s
  - D. 40.5 s

Use the following graph to answer the next question:



- 12) During which time interval was the student travelling at the fastest speed?
- A. 8 - 12 s
  - B. 5 - 8 s
  - C. 3 - 5 s
  - D. 0 - 3 s
- 13) Dexter is travelling on his bike  $4 \text{ m/s [S]}$ . If he accelerates at a rate of  $1.5 \text{ m/s}^2$  for 2 s, what is his final velocity?
- A.  $7.0 \text{ m/s [S]}$
  - B.  $5.5 \text{ m/s [S]}$
  - C.  $3.0 \text{ m/s [N]}$
  - D.  $1.5 \text{ m/s [N]}$
- 14) A runner achieves a velocity of  $11.1 \text{ m/s}$ , 9 sec after he begins. What is his acceleration? What distance did he cover? Show your work.