

Due: Wed, May 15, 2019 12:00 AM EDT

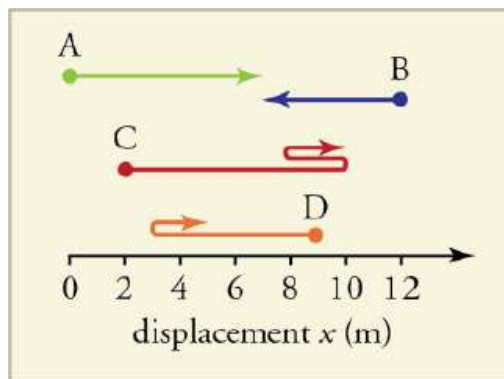
Question

1 2 3 4 5 6 7 8 9 10

1. Question Details

OSColPhysAP2016 2.1.P.001. [3653187]

Find the following for path A in the figure below.



(a) the distance traveled (in m)

 7 m

(b) the magnitude of the displacement (in m) from start to finish

 7 m

(c) the displacement (in m) from start to finish

 7 m

†

2. Question Details

OSColPhysAP2016 2.1.WA.001. [3570305]

A truck travels due east for a distance of 1.9 km, turns around and goes due west for 8.3 km, and finally turns around again and travels 3.0 km due east.

(a) What is the total distance that the truck travels?

 13.2 km

(b) What are the magnitude and direction of the truck's displacement?

magnitude 3.4 kmdirection west

3. Question Details

OSColPhysAP2016 2.3.P.006. [3604431]

A helicopter blade spins at exactly 115 revolutions per minute. Its tip is 4.50 m from the center of rotation.

- (a) Calculate the average speed (in m/s) of the blade tip in the helicopter's frame of reference.

  54.2 m/s

- (b) What is its average velocity (in m/s) over one revolution?

  0 m/s

+

4. Question Details

OSColPhysAP2016 2.3.P.007. [3604517]

The North American and European continents are moving apart at a rate of about 3 cm/y. At this rate how long will it take them to drift 660 km farther apart than they are at present?

  2.20e+07 y

+

5. Question Details

OSColPhysAP2016 2.3.P.009. [3604576]

On May 26, 1934, a streamlined, stainless steel diesel train called the Zephyr set the world's nonstop long-distance speed record for trains. Its run from Denver to Chicago took 13 hours, 4 minutes, 58 seconds, and was witnessed by more than a million people along the route. The total distance traveled was 1633.8 km. What was its average speed in km/h?

  125 km/h

What was its average speed in m/s?

  34.7 m/s

+

6. Question Details

OSColPhysAP2016 2.3.WA.005. [3570221]

Nerve impulses in the human body travel at a speed of about 100 m/s. A 1.8 m tall man accidentally drops a hammer on his toe. How long does it take for the nerve impulse to travel from his toe to his brain?

  0.018 s

7. Question Details

OSColPhysAP2016 2.3.WA.008. [3570147]

A car moves in a straight line at 16.0 m/s for 12.0 miles, then at 30.0 m/s for another 12.0 miles.

- (a) Is the car's average speed less than, greater than, or equal to 23.0 m/s?

- ☒  less than 23.0 m/s
☐ equal to 23.0 m/s
☐ greater than 23.0 m/s

- (b) Calculate the car's average speed. (Enter your answer to three significant figures.)

  20.9 m/s

8. Question Details

OSColPhysAP2016 2.3.WA.010. [3570204]

You walk for 6.44 km with at a constant velocity of **2.58** m/s due west, turn around, and then walk with an average velocity of **0.410** m/s due east. From your starting point to your destination, your overall average velocity is **1.34** m/s due west. During the trip, how far east did you walk?

  m

9. Question Details

OSColPhysAP2016 2.4.P.016. [3604474]

A cheetah can accelerate from rest to a speed of **21.0** m/s in **5.25** s. What is its acceleration (in m/s^2)?

  m/s^2

+

10. Question Details

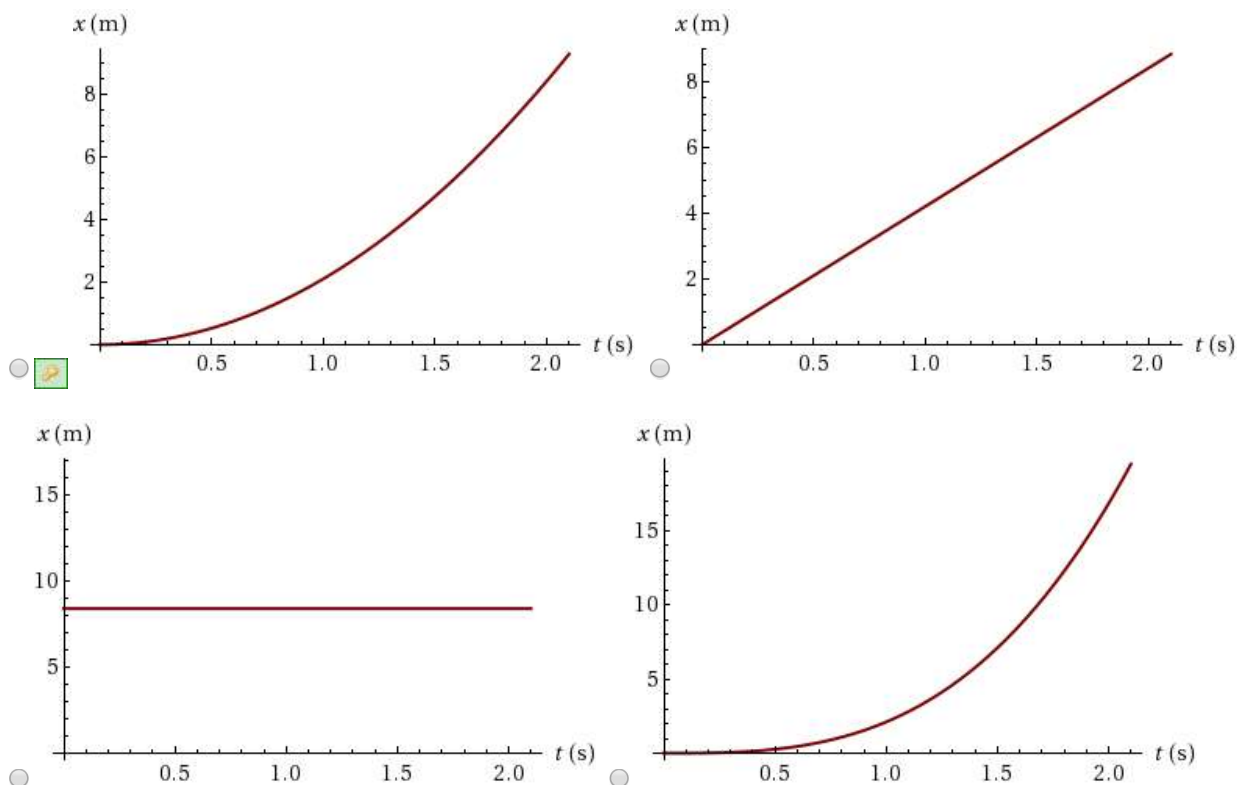
OSColPhysAP2016 2.5.P.020. [3604471]

An Olympic-class sprinter starts a race with an acceleration of **4.20** m/s^2 .

(a) What is her speed (in m/s) **2.00** s later?

  m/s

(b) Sketch a graph of her position vs. time for this period.



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