Short Answer

3.1 Acceleration   21.

True or False—The vector for a negative acceleration points in the opposite direction when compared to the vector for a positive acceleration.

    a. True
    b. False

22.

If a car decelerates from $20\,\text{m/s}$ to $15\,\text{m/s}$ in $5\,\text{s}$, what is Δv?

    a. –5 m/s
    b. –1 m/s
    c. 1 m/s
    d. 5 m/s

23.

How is the vector arrow representing an acceleration of magnitude 3 m/s^2 different from the vector arrow representing a negative acceleration of magnitude 3 m/s^2?

    a. They point in the same direction.
    b. They are perpendicular, forming a 90° angle between each other.
    c. They point in opposite directions.
    d. They are perpendicular, forming a 270° angle between each other.

24.

How long does it take to accelerate from 8.0 m/s to 20.0 m/s at a rate of acceleration of 3.0 m/s^2?

    a. 0.25 s
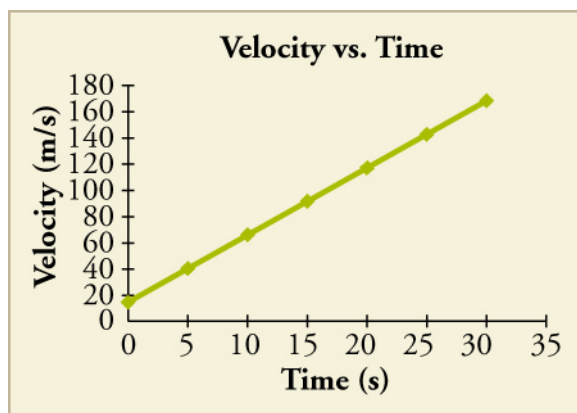   b. 4.0 s
    c. 9.33 s
    d. 36 s

3.2 Representing Acceleration with Equations and Graphs   25.

If a plot of displacement versus time is linear, what can be said about the acceleration?

    a. Acceleration is 0.
    b. Acceleration is a non-zero constant.
    c. Acceleration is positive.
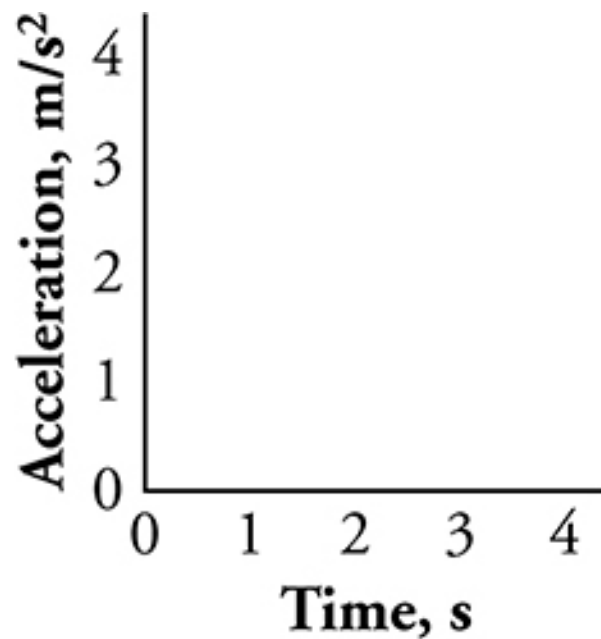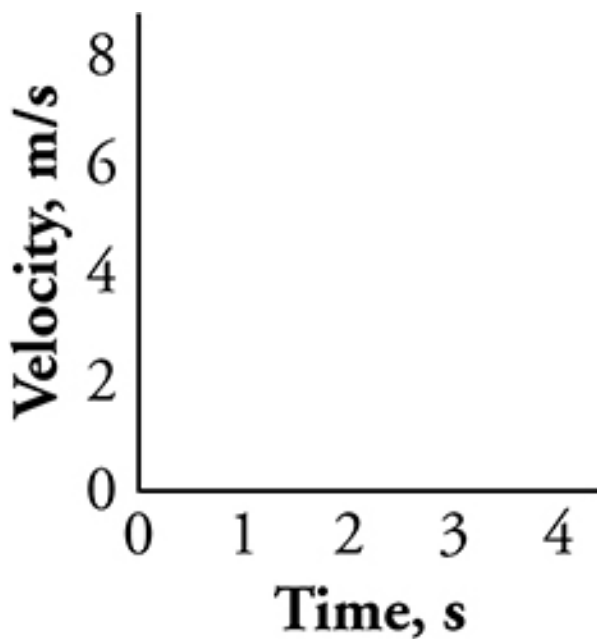   d. Acceleration is negative.

26.

Velocity vs. Time

True or False: —The image shows a velocity vs. time graph for a jet car. If you take the slope at any point on the graph, the jet car's acceleration will be 5.0 m/s^2.

    a. True
    b. False

27.

When plotted on the blank plots, which answer choice would show the motion of an object that has uniformly accelerated from 2 m/s to 8 m/s in 3 s?

    a. The plot on the left shows a line from (0,2) to (3,8) while the plot on the

right shows a line from (0,2) to (3,2).
  b. The plot on the left shows a line from (0,2) to (3,8) while the plot on the right shows a line from (0,3) to (3,3).
  c. The plot on the left shows a line from (0,8) to (3,2) while the plot on the right shows a line from (0,2) to (3,2).
  d. The plot on the left shows a line from (0,8) to (3,2) while the plot on the right shows a line from (0,3) to (3,3).

28.

When is a plot of velocity versus time a straight line and when is it a curved line?

  a. It is a straight line when acceleration is changing and is a curved line when acceleration is constant.
  b. It is a straight line when acceleration is constant and is a curved line when acceleration is changing.
  c. It is a straight line when velocity is constant and is a curved line when velocity is changing.
  d. It is a straight line when velocity is changing and is a curved line when velocity is constant.