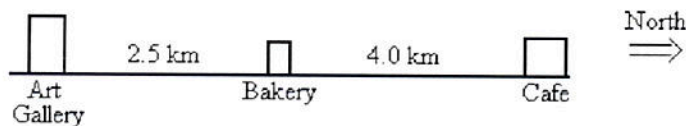


SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question

- 1) A certain car can accelerate from 0 to 100 km/hr in 6.0 seconds. What is the average acceleration of that car in m/s^2 ? 1) _____

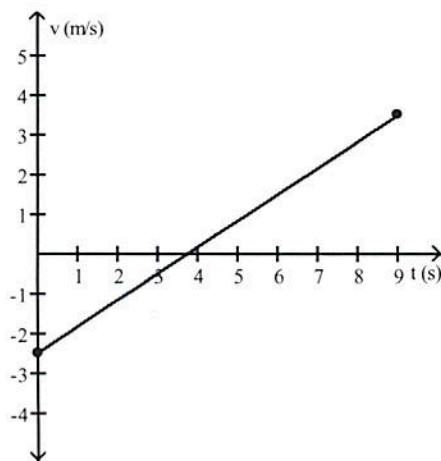
Figure 2-6



- 2) Refer to Figure 2-6. If you start from the Bakery, travel to the Cafe, and then to the Art Gallery, what is the magnitude of your displacement? 2) _____
- 3) A car starts from rest and accelerates at 6.00 m/s^2 . How far does it travel in 3.00 s? 3) _____
- 4) An airplane starts from rest and accelerates at 10.8 m/s^2 . What is its speed at the end of a 400 m-long runway? 4) _____
- 5) A car is moving with a speed of 32.0 m/s. The driver sees an accident ahead and slams on the brakes, giving the car a deceleration of 3.50 m/s^2 . How far does the car travel after the driver put on the brakes before it comes to a stop? 5) _____
- 6) A car is traveling with a constant speed when the driver suddenly applies the brakes giving the car a deceleration of 3.50 m/s^2 . If the car comes to a stop in a distance of 30.0 m, what was the car's original speed? 6) _____
- 7) A car is traveling at 30.0 m/s when the driver suddenly applies the brakes, giving the car a constant deceleration. The car comes to a stop in a distance of 120.0 m. What was the deceleration of the car? 7) _____
- 8) A car is traveling with a constant speed when the driver suddenly applies the brakes giving the car a deceleration of 3.50 m/s^2 . The car comes to a stop in a distance of 34.0 m. What was the car's speed when it had traveled 17.0 m from the point where the brakes were applied? 8) _____
- 9) An object is thrown upwards with a speed of 14 m/s. How high above the projection point does it reach? 9) _____
- 10) An object is thrown upwards with a speed of 14.0 m/s. How long does it take it to reach its maximum height? 10) _____
- 11) An object is thrown upwards with a speed of 14 m/s. How high above the projection point is it after 0.50 s? 11) _____
- 12) To determine the height of a bridge above the water, a person drops a stone and measures the time it takes for it to hit the water. If the time is 2.3 s, what is the height of the bridge? 12) _____

- 13) To determine the height of a bridge above the water, a person drops a stone and measures the time it takes for it to hit the water. If the height of the bridge is 41 m, how long will it take for the stone to hit the water? 13) _____
- 14) An astronaut stands by the rim of a crater on the moon, where the acceleration of gravity is 1.62 m/s^2 . To determine the depth of the crater, she drops a rock and measures the time it takes for it to hit the bottom. If the time is 6.3 s, what is the depth of the crater? 14) _____
- 15) An astronaut stands by the rim of a crater on the moon, where the acceleration of gravity is 1.62 m/s^2 . To determine the depth of the crater, she drops a rock and measures the time it takes for it to hit the bottom. If the depth of the crater is 120 m, how long does it take for the rock to fall? 15) _____
- 16) An object is thrown upwards with a speed of 16 m/s. How long does it take it to reach a height of 7.0 m on the way up? 16) _____
- 17) An object is thrown upwards with a speed of 13 m/s. How long does it take to reach a height of 4.0 m above the projection point while descending? 17) _____
- 18) The slope of a line connecting two points on a velocity versus time graph gives 18) _____
- 19) The slope of a tangent line at a given time value on a velocity versus time graph gives 19) _____

Figure 2-1



- 20) The motion of a particle is described in the velocity vs. time graph shown in Figure 2-1. We can say that its speed 20) _____
- 21) Suppose that a car traveling to the East (+x direction) begins to slow down as it approaches a traffic light. Make a statement concerning its acceleration. 21) _____
- 22) An object is moving with constant non-zero velocity in the +x axis. The position versus time graph of this object is 22) _____

- 23) An object is moving with constant non-zero acceleration in the $+x$ axis. The position versus time graph of this object is 23) _____
- 24) If the position versus time graph of an object is a horizontal line, the object is 24) _____
- 25) If the velocity versus time graph of an object is a straight line making an angle of 30° degrees with the time axis, the object is 25) _____
- 26) If the velocity versus time graph of an object is a horizontal line, the object is 26) _____
- 27) A stone is thrown straight up. When it reaches its highest point 27) _____
- 28) A ball is thrown straight up, reaches a maximum height, then falls to its initial height. Make a statement about the direction of the velocity and acceleration as the ball is coming down. 28) _____
- 29) Two athletes jump straight up. John has twice the initial speed of Harry. Compared to Harry, John stays in the air 29) _____

Answer Key

Testname: UNTITLED4

- 1) 4.6 m/s^2
- 2) 2.5 km
- 3) 27.0 m
- 4) 93.0 m/s
- 5) 146 m
- 6) 14.5 m/s
- 7) 3.75 m/s^2
- 8) 10.9 m/s
- 9) 10 m
- 10) 1.43 s
- 11) 5.8 m
- 12) 26 m
- 13) 2.9 s
- 14) 32 m
- 15) 12.2 s
- 16) 0.52 s
- 17) 2.3 s
- 18) average acceleration.
- 19) instantaneous acceleration.
- 20) increases.
- 21) The car is decelerating, and its acceleration is negative.
- 22) a straight line making an angle with the time axis.
- 23) a parabolic curve.
- 24) at rest.
- 25) moving with constant non-zero acceleration.
- 26) moving with constant non-zero speed.
- 27) its velocity is zero and its acceleration is not zero.
- 28) Both its velocity and its acceleration point downward.
- 29) twice as long.