

CFU: Acceleration Graphs

EN: _____

1. Consider the graph at the right. The object whose motion is represented by this graph is ... (circle or highlight all that are true):

moving in the positive direction.

moving with a negative velocity.

changing directions.

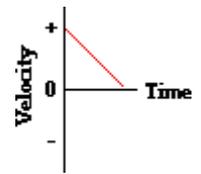
moving with a positive acceleration.

moving with a constant velocity.

slowing down.

speeding up.

moving with a constant acceleration.

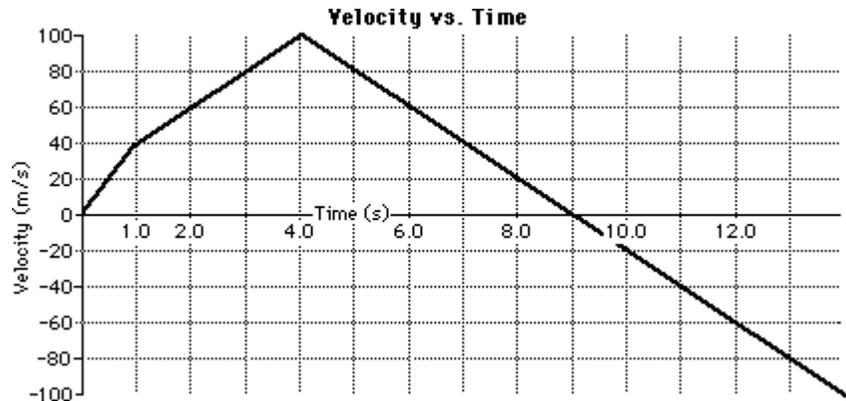


2. The velocity-time graph for a two-stage rocket is shown below. Use the graph and your understanding of slope calculations to determine the acceleration of the rocket during the listed time intervals. **Show your work!!!**

a. $t = 0 - 1$ second!

b. $t = 1 - 4$ second

c. $t = 4 - 12$ second



3. Look at the v-t graph below of the toy train.

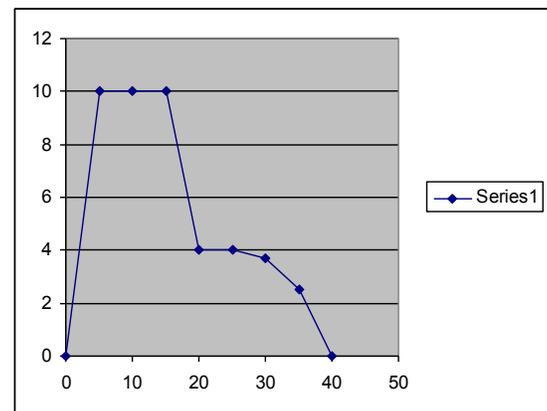
a. During which time interval or intervals is the speed constant?

b. During which interval or intervals is the train's acceleration positive?

c. During which time interval is its acceleration the most negative?

4. Using the figure above, find the average acceleration during the following time intervals:

a. 0 to 5 s b. 15 to 20 s c. 0 to 40 s



5. **Describe** the motion depicted by the following velocity-time graphs. In your descriptions, make reference to the direction of motion (+ or - direction), the velocity and acceleration and any changes in speed (speeding up or slowing down) during the various time intervals (e.g., intervals A, B, and C).

Diagram A

Description

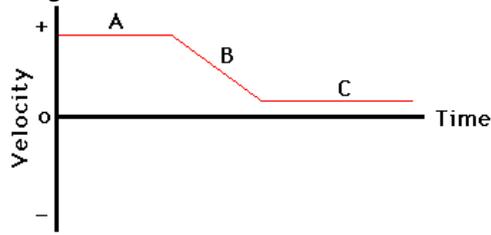


Diagram B

Description

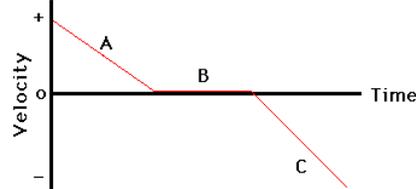
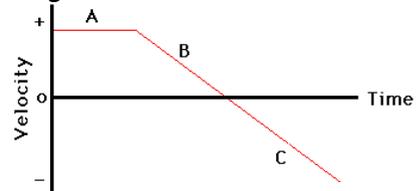
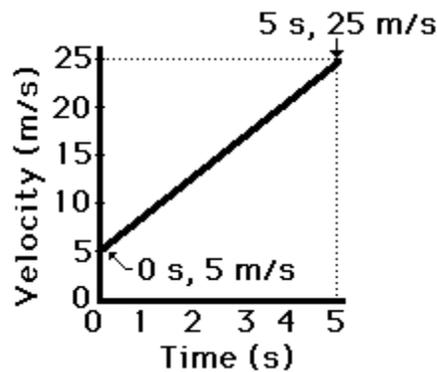


Diagram C

Description



6. Consider the velocity-time graph below. Determine the acceleration (i.e., slope) of the object as portrayed by the graph. **Show your work!!!!**



7. A golf ball rolls up a hill toward a miniature golf hole. Assign the direction toward the hole as being positive.

- If the ball starts with a speed of 2.0 m/s and slows at a constant rate of 0.50 m/s^2 , what is the velocity after 2.0 s?
- If the constant acceleration continues for 6.0 s, what will be its velocity then?
- Describe in words and a motion diagram the motion of a golf ball.

