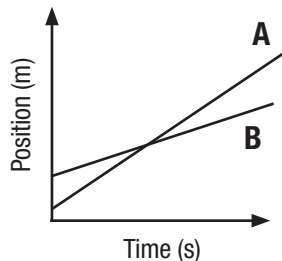


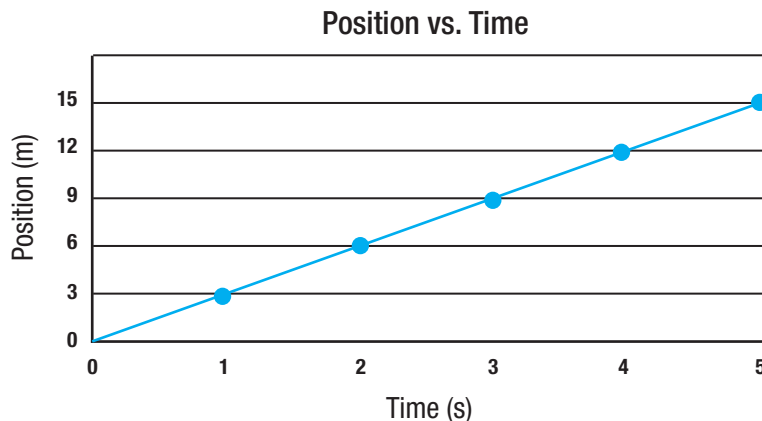
Work each of the following problems. SHOW ALL WORK.

1. Which object is moving faster in the graph below? Justify your answer.



Object A is moving faster because it has a greater slope, and the slope of a position versus time graph represents an object's average velocity.

2. Using the graph provided, determine the average velocity of the object.



The velocity of an object can be determined by finding the slope of a position versus time graph:

$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{15 \text{ m} - 0}{5 \text{ s} - 0} = \frac{15 \text{ m}}{5 \text{ s}} = 5 \text{ m/s}$$

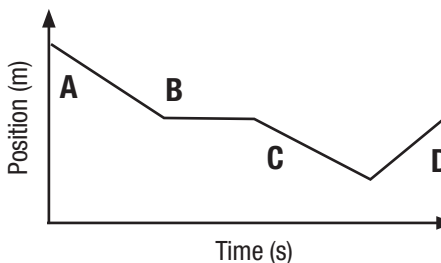
3. Describe the object's velocity for each segment of the position versus time graph below. State the direction of motion (positive or negative) and describe the speed (constant, increasing, or decreasing), or state if the object is at rest.

A: negative, constant velocity

B: at rest

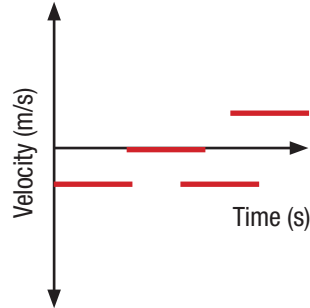
C: negative, constant velocity

D: positive, constant velocity



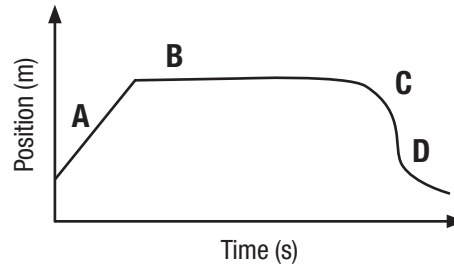
Work each of the following problems. SHOW ALL WORK.

4. Create and label the corresponding velocity versus time graph for the position versus time graph in the previous question.

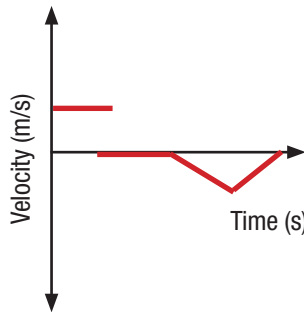


5. Describe the object's velocity for each segment of the position versus time graph below. State the direction of motion (positive or negative) and describe the speed (constant, increasing, or decreasing), or state if the object is at rest.

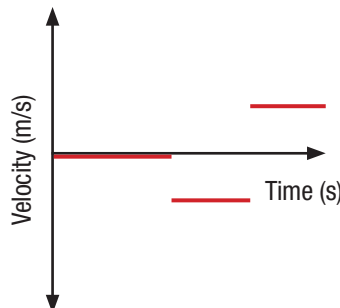
- A: positive, constant velocity
 B: at rest
 C: negative, increasing velocity
 D: negative, decreasing velocity



6. Create and label the corresponding velocity versus time graph for the position versus time graph in the previous question.

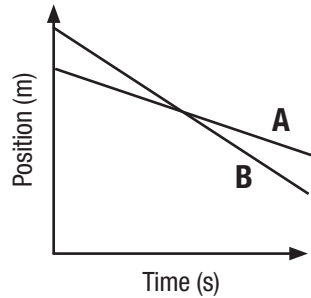


7. Create and label the corresponding acceleration versus time graph for the velocity versus time graph in the previous question.



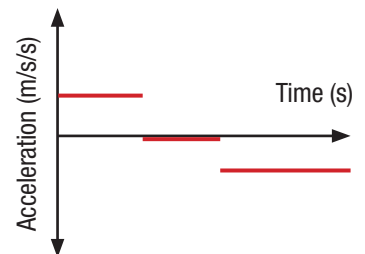
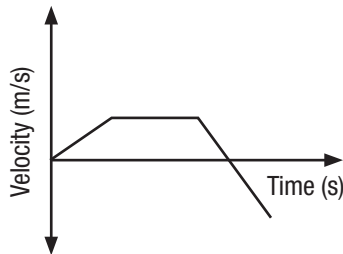
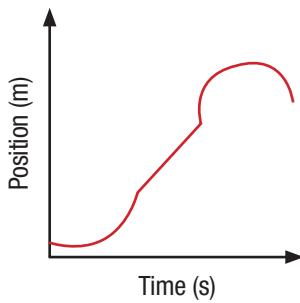
Work each of the following problems. SHOW ALL WORK.

8. Which object has a greater magnitude of acceleration? Justify your answer.



Object B has the greater magnitude of acceleration because it has a slope that is steeper and more negative.

9. Complete the other two graphs based on the one provided:



10. Complete the other two graphs based on the one provided:

