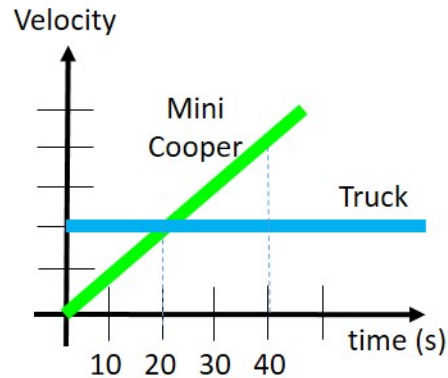
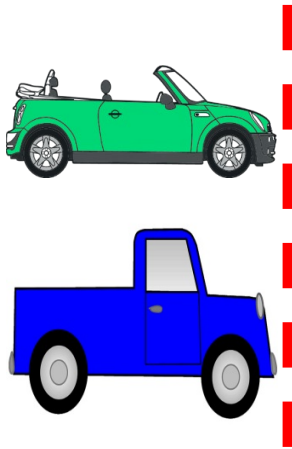


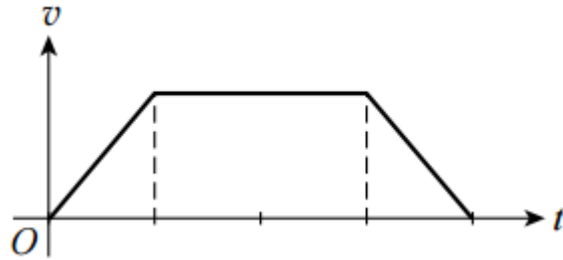
Unit 1: Quiz 18  
**1-Dimensional Motion**

1. At time  $t = 0$ , a Mini Couper starts from rest at a green light and accelerates. A truck passes through the same light at the same time going in the same direction at a constant speed. The graphs of velocity vs. time for both vehicles is shown below.



- a. Which of the following is true at time = 20 seconds? (**EXPLAIN**)
- The Mini-Cooper is behind the Truck
  - The Mini-Cooper is passing the Truck
  - The Mini-Cooper is in front of the Truck
  - The Truck is accelerating faster than the Mini-Cooper
- b. From time = 0 to time = 40 seconds, the areas under both curves are equal. Therefore, which of the following is true at time = 40 seconds? (**EXPLAIN**)
- The Mini-Cooper is behind the Truck
  - The Mini-Cooper is passing the Truck
  - The Mini-Cooper is in front of the Truck
  - The Truck is accelerating faster than The Mini-Cooper

2. The graph below shows the velocity ( $v$ ) as a function of time ( $t$ ) for an object moving in a straight line.



Which of the following graphs correctly illustrates the corresponding displacement ( $x$ ) as a function of time ( $t$ ) for the same time interval? **EXPLAIN**

