**Problem Set - Distance-Time Graphs**

Examine this graph carefully to answer questions 1 and 2.



1. What is the truck’s displacement from its starting point after:

 (a) 10 s **300 m** (b) 15 s **300 m**

 (c) 30 s **200 m** (d) 43 s **650 m**

 (e) 50 s **800 m**

1. What is the truck’s velocity in each of the intervals **A** through **E**?

 **A**  **30 m/s B**  **0 m/s**

 **C**  **-10 m/s D**  **40 m/s**

 **E** **20 m/s**

1. Describe briefly the kind of motion that is taking place in each of the situations represented by the following displacement *vs*. time graphs.

  

 **a) object travels fast then changes to slower speed**

 **b) object travels fast then stops**

**c) object travels slowly then changes to higher speed, stops then speeds off quickly**

1. Describe briefly the motions represented by each of these graphs. If the speed is changing, state whether it is increasing or decreasing.

  

**a) object travels faster and faster (accelerating)**

**b) object travels fast then slows down (decelerating)**

**c) object travels slowly then changes to higher speed (accelerates), then slows down (decelerates)**

1. Describe the motion represented by each of the following displacement *vs*. time graphs.

  

**a) object travels faster, stops then travel fast back to starting point**

**b) object travels fast then immediately travels back part way, then forward and back several times**

**c) object travels slowly then changes to higher speed (accelerates), then slows down (decelerates) to a stop and reverses direction coming back to the starting point**

Use the following graph for question 6.



1. a) From the graph above, calculate the average speed for the entire 22 s.

**v=d/t or v = d ÷ t**

**v = 25 ÷ 22**

**v = 1.14 m/s**

b) Find the average speed for each of the following time intervals:

1. 0 s to 2 s

**v = d ÷ t**

**v = 5 ÷ 2**

**v = 2.5 m/s**

1. 4 s to 8 s

**v = d ÷ t**

**v = 0 ÷ 4**

**v = 0 m/s**

1. 14 s to 18 s

**v = d ÷ t**

**v = (19-13) ÷ 4**

**v = 1.5 m/s**

1. 6 s to 17 s

**v = d ÷ t**

**v = (15-5) ÷ 11**

**v = 0.91 m/s**