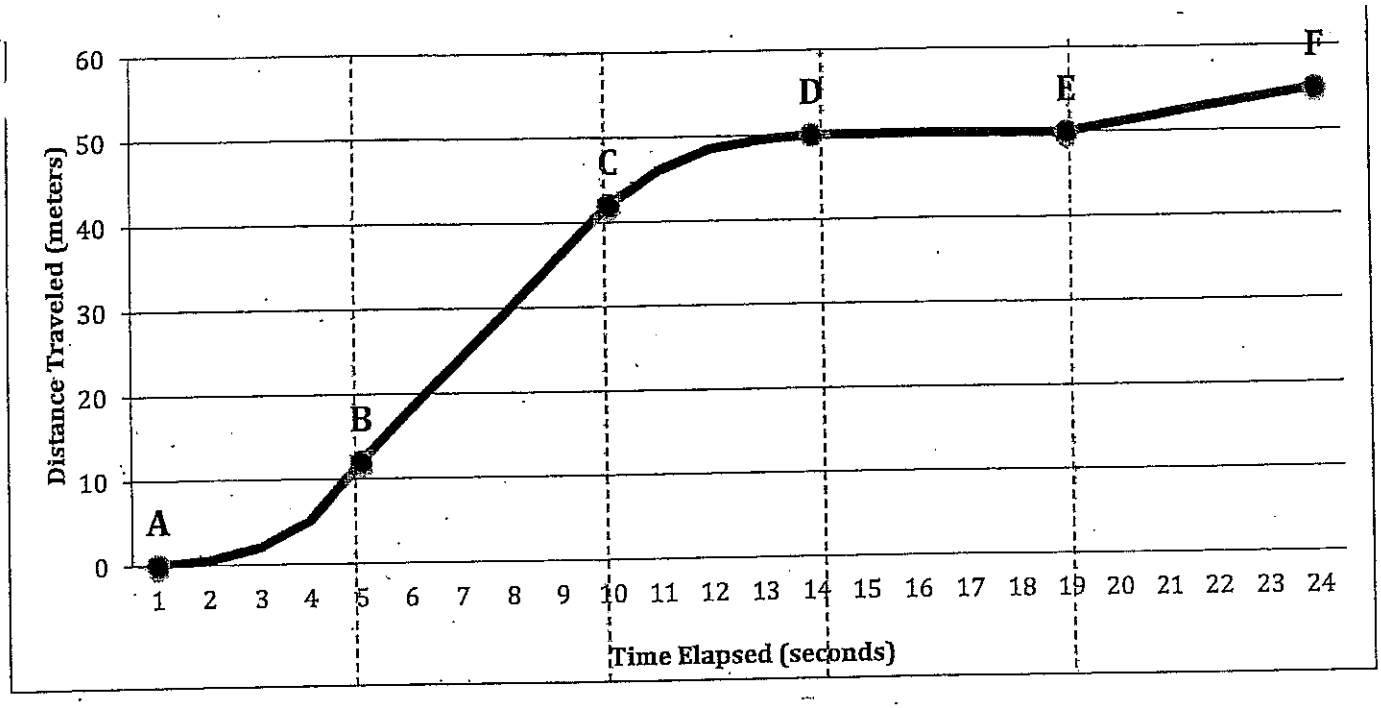
Group Work

Motion Graph



Analysis Questions:

1. On the graph above, write down the type of motion that is occurring for each section of the graph (ie. constant velocity, positive acceleration, negative acceleration, no motion, etc.)

2. Between which two letters is the rate of speed the fastest? Why?

3. The <u>least</u> amount of distance covered occurs between which two letters?

4. Identify the type of motion occurring between letters C and D? Give evidence to support your reasoning.

5. During the total journey, how many total seconds pass when the object <u>not</u> in motion?

6. Calculate the <u>average speed</u> between letters B and C.

7. How much distance did the object cover over the entire journey?

8. Calculate the <u>average speed</u> for the entire journey from point A to point F.

Motion Problems

1. A person is driving his car to a store. The store is 800 m north of the person's starting point. After traveling north 1200 m, the person realizes that he has passed the store. He turns the car around and drives back to the store. Altogether, the trip to the store takes 100 s. (MCAS 2011)
   a. Determine the distance traveled by the car on this trip to the store. Show your calculations and include units in your answer.

   b. Calculate the average speed of the car on this trip. Show your calculations and include units in your answer.

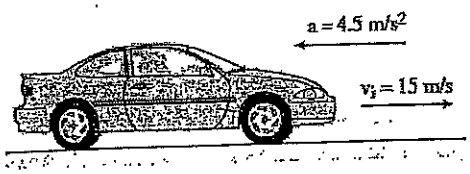
   c. Determine the displacement of the car for this trip. Include units in your answer.

   d. Calculate the average velocity of the car upon arrival at the store. Show your calculations and include units in your answer.

2a) How long will it take a car to accelerate from 20 m/s to 26 m/s at a rate of 1.4 m/s^2? (ModMCAS 2007)

b) How far does it go?

3a) The illustration below shows a car slowing down.



The car was initially traveling at 15 m/s. The car slows with a negative acceleration of 4.5 m/s^2. How long does it take the car to slow to a final velocity of 4.0 m/s? (ModMCAS 2004)

3b) What is the average velocity?